APPENDIX E

Potable and Wastewater Treatment Facilities

POTABLE WATER TREATMENT FACILITIES

Potable water used in the Lower West Coast (LWC) Planning Area is produced by large water treatment facilities, smaller "package" water treatment plants and self-supply (i.e., private wells supplying individual users). This section focuses on the larger regional facilities (equal to or greater than 0.10 million gallons per day or MGD), which due to their existing or future design capacities, could have an impact on the water resource.

There are 34 existing water treatment facilities with a capacity of 0.10 MGD or greater in the planning area. These water treatment facilities are mostly located in the urbanized areas throughout the LWC Planning Area, as shown in **Figure 1** through **Figure 6**. The facilities and other information are tabulated in **Table 1**.

Summary Descriptions of Existing Water Facilities

Eleven facilities use the Surficial Aquifer as their only supply source; two facilities use surface waters as their source; five use the Floridan Aquifer as their source; and, the remainder use a combination of these sources.

Summary descriptions for each of the water treatment facilities located in the LWC Planning Area are presented in this section for each utility. The following information is presented:

Raw Water Supply – This section provides a summary of withdrawal facilities, supply sources and 2003 (October 2002–September 2003) pumpage. The annual allocations are expressed in million gallons per year (MGY) and the maximum daily allocations are expressed in MGD.

Treatment – This section presents the current Florida Department of Environmental Protection (FDEP)-rated capacity, the method of treatment and the average daily flow (ADF).

Proposed/Future – This section states any current construction or permitting underway, future treatment facility expansions/plans and projected utility flows (as provided by the utility).

Collier County Potable Water Treatment Facilities

City of Marco Island

Raw Water Supply

The City of Marco Island's three treatment facilities are supplied by raw water withdrawn from 18 Floridan Aquifer wells and surface water from Marco Lakes. The wells are 10 inches or 12 inches in diameter, range in total depth from 460 feet to 580 feet, and have cased depths ranging from 336 feet to 415 feet. Each well is equipped with a pump rated by the FDEP at 500 gallons per minute (GPM). Raw surface water is withdrawn from Marco Lakes using four 200-horsepower pumps rated by the FDEP at 2,300 GPM. In addition to being sent to two treatment plants, raw water withdrawn from Marco Lakes is also injected into seven, 16-inch diameter aquifer storage and recovery (ASR) wells, each with a total depth of about 790 feet and a cased depth of about 745 feet. Each well is equipped with a pump rated by FDEP at 1,100 GPM.

Withdrawals are authorized under Consumptive Use Permit (CUP) 11-00080-W, which was renewed on February 8, 2006, and expires on February 8, 2016.

Surface Water

Annual Allocation:	1,600 MGY (4.38 MGD) to ASR System
	1,935 MGY (5.30 MGD) from Marco Lakes to surface water treatment
Maximum Daily Allocation:	12.70 MGD (based on max month of 381 MG from all sources)

Floridan Aquifer

Annual Allocation:	1,460 MGY (4.0 MGD)
Maximum Daily Allocation:	See above

The 2003 average daily pumpage from the Floridan Aquifer was 3.30 MGD. The 2003 average daily pumpage from surface water was 5.50 MGD.

Treatment

The City of Marco Island operates two lime softening plants and one reverse osmosis (RO) facility. The RO facility is rated by the FDEP at 6.00 MGD and receives raw water from the Floridan wells. One of the city's lime softening plants (the Marco Shores Plant) is rated by FDEP at 0.70 MGD, and is scheduled to be retired within the next year and replaced by an interconnection that will enable the purchase of bulk water

from Collier County to supply this portion of the Marco Island Service Area. The other (referred to as the Marco Island Lime Plant) is rated by FDEP at 6.67 MGD. Both lime softening plants receive raw water from Marco Lakes.

Proposed/Future

To accommodate anticipated growth, the City of Marco Island is planning to install 6 MGD of new nanofiltration capacity to its existing RO facility and pipe surface water, primarily from the ASR system, for treatment at that facility. To supply raw water for this expanded capacity, the city now has seven operational ASR wells and is planning to install up to five additional raw water ASR wells. The recently issued CUP for the city allows increased seasonal stage-dependant withdrawals from Marco Lakes to charge the ASR system. In order to conserve its Floridan Aquifer source and help prevent increasing chlorides, the city is also investigating the possibility of converting two of its RO trains to nanofiltration to treat a portion of the additional raw water from Marco Lakes.

Information Source

Information was provided by Marco Island Utilities and SFWMD water use files.

City of Naples Water Treatment Facility

Raw Water Supply

Raw water is withdrawn from 51 Lower Tamiami Aquifer wells at the Naples facility. These wells range from 8 inches to 14 inches in diameter in two wellfields (East Golden Gate and Coastal Ridge). The wells have total depths between 71 feet and 137 feet and are cased to depths ranging from 37 feet to 64 feet. The well pumping capacities are between 350 GPM and 1,000 GPM.

The current SFWMD permit (11-00017-W) was issued on June 12, 2003, and expires on June 12, 2008.

Annual Allocation:	6,724 MGY (18.42 MGD)
Maximum Daily Allocation	22.84 MGD

The 2003 average daily pumpage from the East Golden Gate Wellfield was 12.50 MGD and 4.86 MGD from the Coastal Ridge Wellfield.

Treatment

The City of Naples operates a lime softening plant rated by the FDEP at 30.00 MGD to treat raw water withdrawn from the Lower Tamiami Aquifer, followed by chlorination and fluoridation.

Proposed/Future

The CUP authorizes the construction of two, 16-inch diameter wells, each having a total depth of 80 feet, a cased depth of 50 feet and a pump rated at 1,000 GPM. These wells are currently in design. The City of Naples anticipates continued use of existing facilities, and future development of a 10 MGD brackish groundwater supply to meet projected needs.

Information Source

Information was obtained from the City of Naples and SFWMD files.

Collier County North Regional Water Treatment Facility

Raw Water Supply

Raw water to supply the Collier County North facility is withdrawn from 16 Lower Hawthorn Aquifer wells. The wells are all 16 inches in diameter with total depths ranging from 784 feet to 1,070 feet, and are cased between 700 feet and 790 feet. These wells are all equipped with pumps rated at 1,000 GPM.

The North Hawthorn wellfield is regulated pursuant to the SFWMD Permit 11-01447-W, which was issued on May 30, 2002, and expires on December 12, 2016. On March 9, 2005, Collier County received a permit modification to allow five additional Mid-Hawthorn wells to the North Hawthorn wellfield without increasing the annual total allocation.

Annual Allocation: 5 MGY (15.40 MGD)

Maximum Daily Allocation: 21.60 MGD

The 2003 average daily pumping pursuant was 8.64 MGD from the Lower Hawthorn to the North Water Plant.

Treatment

The North County Water Treatment Plant is permitted by the FDEP to treat 12.00 MGD using membrane softening (used to treat water supplied from the Golden Gate wellfield), and 8.00 MGD using RO from the North Hawthorn wellfield.

Proposed/Future

Collier County is in the process of expanding its water treatment capacity as provided in its 10-Year Water Supply Facilities Work Plan. In 2008, the county intends to install 2 MGD of additional high-pressure RO capacity at this facility to treat wells with degraded water quality. Numerous other reliability well and transmission main projects are proposed for this facility between now and 2025.

Information Source

Information was provided by the Collier County Public Utilities and SFWMD water use permit files.

Collier County South Regional Water Treatment Facility

Raw Water Supply

Raw water is withdrawn from 32 Lower Tamiami Aquifer wells at the Collier County South facility. These wells are either 12 inches or 16 inches in diameter, with total depths between 96 feet and 150 feet and cased between 50 feet and 92 feet. All of the 16-inch wells are equipped with pumps rated at 700 GPM. The pumps on the remaining wells (all are 12 inches in diameter) have pumping capacities of either 700 GPM or 1,000 GPM.

The SFWMD permit (11-00249-W) was issued on September 13, 2001, and expires on September 13, 2006.

Annual Allocation: 6,868 MGY (18.81 MGD)

Maximum Daily Allocation: 31.77 MGD

The 2003 average daily pumpage from the Lower Tamiami Aquifer wells was 17.79 MGD.

Treatment

The South County Water Treatment Plant is permitted by the FDEP to treat 12.00 MGD using lime softening (in operation since 1984) to treat water supplied from the Golden Gate wellfield, and has just completed a FDEP-rated expansion to treat 8.00 MGD using RO.

Proposed/Future

Collier County is in the process of expanding its water treatment capacity as provided in its 10-Year Water Supply Facilities Work Plan. According to this plan, the South County Regional Water Treatment Plant will be expanded to treat an additional 12.00 MGD using RO. The South County wellfield will be expanded with an additional 23 wells to provide the needed raw water. This expanded RO capacity is expected to be completed in 2007. In addition to the expansion of the South County Regional Plant, two additional water treatment plants, the Northeastern Regional Water Treatment Plant and the Southeastern Regional Plant, are scheduled to come on-line between 2009 and 2025. Both of these plants will use an RO treatment process, and each, when completed, will be capable of producing 20.00 MGD.

Information Source

Information was provided by the Collier County Public Utilities, the Collier County 10-Year Water Supply Facilities Work Plan and SFWMD water use permit files.

Everglades City Water Treatment Plant

Raw Water Supply

At the Everglades City facility, raw water is withdrawn from three Water Table Aquifer wells, each with a diameter of 8 inches, and each having a total depth of 25 feet and a cased depth of 15 feet. The wells' pumps are all rated at 220 GPM.

The current SFWMD permit (11-00160-W) was issued on August 5, 2003, and expires on September 27, 2008.

Annual Allocation: 105 MGY (0.29 MGD)

Maximum Daily Allocation 0.46 MGD

The 2003 average daily pumpage from the Lower Tamiami Aquifer was 0.27 MGD.

Treatment

Everglades City uses aeration and iron filtration to treat water withdrawn from its wells. The water treatment plant is permitted by the FDEP at 0.50 MGD.

Proposed/Future

Everglades City is in the process of switching from free chlorine to ammonia to provide the required levels of disinfection for its finished water. If requested, the city is prepared to extend potable water to the community of Copeland, which is currently served by the Lee-Cypress Cooperative. Everglades City has the existing capacity to provide this service (Copeland has only 54 houses), though as of this writing there are no firm plans for such extension.

Information Source

Information was obtained from the Everglades City, Anchor Engineering and SFWMD files.

Florida Government Utility Authority (FGUA) – Golden Gate Facility

Raw Water Supply

Raw water is withdrawn from eight Water Table Aquifer wells at the Golden Gate facility. These wells range from 6 inches to 10 inches in diameter, have total depths between 22 feet and 45 feet, and are cased to depths between 15 feet and 35 feet. The well pumping capacities are between 160 GPM and 250 GPM.

The current SFWMD permit (11-00148-W) was issued on September 11, 2003, and expires on September 11, 2008.

Annual Allocation: 702 MGY (1.92 MGD)

Maximum Daily Allocation 2.38 MGD

The 2003 average daily pumpage from the Water Table Aquifer was 1.50 MGD.

Treatment

The Golden Gate Treatment Plant is permitted by the FDEP to treat 1.22 MGD using lime softening and 0.50 MGD using RO.

Proposed/Future

The FGUA has initiated permitting to expand the capacity of the Golden Gate Water Treatment Plant's RO facility by an additional 0.25 MGD. This will bring the total treatment capacity to 1.97 MGD. No new wells are proposed; rather, FGUA is contemplating applying for a permit to deepen its current Well 9 to supply additional water for the RO process without an increase in allocation.

Information Source

Information was obtained from the Florida Government Utility Authority and SFWMD files.

Immokalee Water and Sewer District

Raw Water Supply

Raw water is drawn from 13 Lower Tamiami Aquifer wells at the Immokalee facility. Two of the wells are 6 inches in diameter, with the remainder being 8 inches in diameter. The wells have total depths ranging from 175 feet to 315 feet, and cased depths ranging from 95 feet to 250 feet. The well pumping capacities are between 200 GPM and 400 GPM.

The current SFWMD permit (11-00013-W) was issued on July 8, 2004, and expires on June 15, 2010.

Annual Allocation:	1,227 MGY (3.36 MGD)
Maximum Daily Allocation	4.71 MGD

The 2003 average daily pumpage from the Lower Tamiami Aquifer was 2.44 MGD.

Treatment

The Immokalee Water and Sewer District uses three lime softening facilities to treat the raw water withdrawn from the Lower Tamiami Aquifer. The largest is the Jerry V. Warden Plant, which is rated by the FDEP at 2.25 MGD, followed by the Airport Plant, which is FDEP-rated at 1.35 MGD, and lastly the Carson Road Plant, which is currently rated by the FDEP at 0.90 MGD.

Proposed/Future

The FDEP has issued the permits to allow the expansion of the Carson Road facility to 2.10 MGD. This project is progressing through Collier County's site plan approval process. To provide additional raw water for this facility, the Immokalee Water and Sewer District intends to construct two additional Lower Tamiami Aquifer wells at the Carson Road facility, along with one additional well at the Jerry V. Warden Plant.

Information Source

Information was obtained from the Immokalee Water and Sewer District and SFWMD files.

Orangetree Utilities

Raw Water Supply

Raw water is withdrawn from two Lower Tamiami Aquifer wells located within the Orangetree community. These wells are 12 inches in diameter, are cased to 70 feet, have total depths of 180 feet and are each equipped with a pump rated at 300 GPM.

The current SFWMD permit (11-00419-W) was issued on February 9, 2005, and expires on February 9, 2010. The approved allocations are:

Annual Allocation: 473 MGY (1.29 MGD)

Maximum Daily Allocation: 1.90 MGD

The 2003 average daily pumpage was 0.25 MGD.

Treatment

Orangetree Utilities uses membrane softening technology to treat raw water withdrawn from the Lower Tamiami Aquifer. The membrane softening plant is rated by the FDEP at 0.75 MGD.

Proposed/Future

In order to meet future anticipated demands, Orangetree Utilities has requested and received from the SFWMD a modification to its permit to allow four additional Lower Tamiami Aquifer wells and the allocations previously stated (473 MGY with 1.29 MGD Daily Average). Each of the new wells will be 12 inches in diameter, cased to 70 feet with total depths of 180 feet and equipped with wells rated at 300 GPM. Of the six wells, one will be a reserve well to provide backup capability. The membrane softening equipment was installed in 2004, prior to which Orangetree Utilities had used a lime softening plant rated at 0.44 MGD. This improvement, and the wells to supply the new system, nearly doubles Orangetree's capacity.

According to Collier County's Water Supply Facilities Work Plan, the area served by Orangetree Utilities will become part of the Collier County Water and Sewer District by 2012.

Information Source

Information was provided by AM Engineering, Water Resource Solutions, the Collier County Water Supply Facilities Work Plan and SFWMD water use files.

Port of the Islands Community Improvement District

Raw Water Supply

Raw water is withdrawn from two Surficial Aquifer System wells. Each well is 6 inches in diameter, with a total depth of 40 feet. The cased depth is uncertain; however, each well is equipped with a pump rated at 200 GPM.

The current SFWMD permit (11-00271-W) was issued on March 9, 1995, and expires on March 9, 2005. The permit is currently in for renewal.

Annual Allocation:	109 MGY (0.29 MGD)
Maximum Daily Allocation	0.45 MGD

The 2003 average daily pumpage from the Surficial Aquifer was 0.08 MGD.

Treatment

Raw water is treated through lime softening at this facility, which is rated by the FDEP at 0.44 MGD.

Proposed/Future

There are no plans to enlarge or modify this facility at this time.

Information Source

Information was obtained from the Port of the Islands Community Improvement District and SFWMD files.

Glades County Potable Water Treatment Facilities

City of Moore Haven Water Treatment Plant

Raw Water Supply

Raw water is withdrawn from four Surficial Aquifer wells at the Moore Haven facility. These wells are all 10 inches in diameter. One is cased to 55 feet with a total depth of 110 feet, while the remaining three are all cased to 60 feet and have a total depth of 120 feet. All four wells are equipped with a pump rated at 400 GPM.

The current SFWMD permit (22-00045-W) was issued on July 15, 1999, and expires on July 15, 2009.

Annual Allocation: 146 MGY (0.40 MGD)

Maximum Daily Allocation: 0.70 MGD

The 2003 average daily pumpage from the Surficial Aquifer was 0.34 MGD.

Treatment

The City of Moore Haven treats raw water at a lime softening facility rated by the FDEP at 0.75 MGD.

Proposed/Future

Future plans are not available at this time.

Information Source

Information was obtained from SFWMD permit files.

Hendry County Potable Water Treatment Facilities

City of LaBelle Water Treatment Plant

Raw Water Supply

At the LaBelle facility, raw water is withdrawn from five Water Table Aquifer wells. Three of the wells are 6 inches in diameter, and range in total depth from 24 feet to 47 feet with cased depths ranging from 20 feet to 25 feet. Of these three, two are equipped with pumps rated at 140 GPM, and the third has a pump rated at 150 GPM. The remaining two wells are both 8 inches in diameter with total depths of 45 feet and are cased to 20 feet. Both are equipped with pumps rated by the FDEP at 225 GPM.

The current SFWMD permit (26-00105-W) was issued on February 9, 2005, and expires on February 9, 2010.

Annual Allocation: 237 MGY (0.65 MGD)

Maximum Daily Allocation: 0.81 MGD

The 2003 average daily pumpage from the Water Table Aquifer was 0.61 MGD.

Treatment

Lime softening, followed by sand filtration, fluoridation and gas chlorination, is used to treat raw water at this facility, which is rated by the FDEP at 1.00 MGD.

Proposed/Future

In anticipation of increased growth and development, the City of LaBelle is proposing the staged development of an 8 MGD brackish RO supply. The first phase of RO capacity (5 MGD) is schedule to be completed in 2009, with the remaining capacity to be completed in the 2016–2020 time frame. When the new facility is operational, the existing lime softening facility will be decommissioned.

Information Source

Information was provided by the City of LaBelle and SFWMD permit files.

Clewiston Water Treatment Plant (U.S. Sugar Corporation)

Raw Water Supply

Six pipelines provide raw water at the Clewiston facility. These pipelines withdraw Surface Water from Lake Okeechobee. Four of the pipelines are 14 inches in diameter and equipped with pumps rated between 2,100 GPM and 5,600 GPM. One pipeline is 16 inches in diameter and equipped with a pump rated at 5,000 GPM, and the other pipeline is 12 inches in diameter and equipped with a pump rated at 5,000 GPM.

The current SFWMD permit (26-00024-W) was issued on October 9, 1997, and expires on May 9, 2006. The permit is currently in for renewal.

Annual Allocation: 2,106 MGY (5.77 MGD)

Maximum Daily Allocation: 10.38 MGD

The 2003 average daily pumpage from Lake Okeechobee was 6.17 MGD.

Treatment

The Clewiston Plant uses enhanced lime softening, followed by carbon filtration, to treat raw water. This facility is rated by the FDEP at 6.00 MGD.

Proposed/Future

The U.S. Sugar Corporation is currently a bulk supplier of potable water to the City of Clewiston, as well as the South Shore Water Association. However, in 2008, U.S. Sugar will cease providing water to these two entities, as it will need all of its water production for its own operations. As part of its re-allocation to provide additional water to its mill operations, U.S. Sugar is investigating the possibility of switching its treatment to coagulation and carbon filtration.

The City of Clewiston and the South Shore Water Association are jointly developing a 3 MGD brackish water supply (Upper Floridan Aquifer) and RO water treatment plant. The facility is scheduled to be operational in the summer of 2008.

Information Source

Information was provided by the U.S. Sugar Corporation and SFWMD permit files.

Hendry Correctional Institution (Florida Department of Corrections)

Raw Water Supply

Raw water is withdrawn from two Lower Tamiami Aquifer wells at the Hendry Correctional Institute. Both of these wells are 10 inches in diameter with total depths of 125 feet and cased depths of 97 feet each. Each well is equipped with a pump rated by the FDEP at 400 GPM.

The current SFWMD permit (26-00164-W) was issued on July 13, 2005, and will expire on July 13, 2010.

Annual Allocation: 486.44 MGY (1.33 MGD)

Maximum Daily Allocation: 1.88 MGD

The 2003 average daily pumpage from the Lower Tamiami Aquifer was 0.14 MGD.

Treatment

Lime softening is used to treat raw water at this facility, which is rated by the FDEP at 0.60 MGD.

Proposed/Future

Hendry Correctional Institution has had a variable inmate population depending on the needs and financial situation of the Department of Corrections. While the population has averaged roughly 1,200 inmates, the number dropped to approximately 200 in the early 2000s, including 2003, which accounts for the low pumpage rate. In addition, only two of the five wells authorized under the SFWMD permit have been constructed. The Department of Corrections has recently chosen to fulfill its maximum population count of 4,914, as noted in the permit renewal application (040810-19). As part of the plan to increase the inmate population, the Department of Corrections intends to construct the remaining three wells to provide the needed water. The Department of Corrections is also considering switching to membrane filtration, though there are no firm plans or timelines as of this writing.

Information Source

Information was provided by the McDonald Group International (consultant for the Department of Corrections/Hendry Correctional Institution) and SFWMD permit files.

Port LaBelle (Hendry County) Water Treatment Plant

Raw Water Supply

At Port LaBelle, raw water is withdrawn from two Sandstone Aquifer wells. The first well is 8 inches in diameter with a total depth of 300 feet and a cased depth of 250 feet. It is equipped with a pump rated by the FDEP at 450 GPM. The second well is 14 inches in diameter with a total depth of 283 feet and cased to 220 feet. It is equipped with a pump rated by FDEP at 500 GPM.

The current SFWMD permit (26-00096-W) was issued on November 13, 1997, and expires on November 13, 2007.

Annual Allocation: 117 MGY (0.32 MGD)

Maximum Daily Allocation: 0.93 MGD

The 2003 average daily pumpage from the Sandstone Aquifer was 0.25 MGD.

Treatment

Lime softening is used by Hendry County to treat raw water at its Port LaBelle Plant, which is rated by FDEP at 0.50 MGD.

Proposed/Future

Hendry County has initiated the design and procurement process for a 0.90 MGD membrane softening plant. When the new plant is completed (scheduled for spring 2007), the existing lime softening facility will be decommissioned. The new membrane softening plant will require additional production well capacity, which would require modification of the county's existing CUP.

Information Source

Information was provided by Hendry County Utilities and SFWMD water use files.

Lee County Potable Water Treatment Facilities

Bonita Springs Utilities

Raw Water Supply

Bonita Springs Utilities, Inc. withdraws supply from 24 Lower Tamiami Aquifer wells and eight Floridan (Lower Hawthorn) wells located in two wellfields in southern Lee County. The Lower Tamiami wells are between 8 inches and 12 inches in diameter, and range in total depth from 80 feet to 100 feet, with cased depth ranging from 58 feet to 91 feet. The Floridan Aquifer wells are between 12 inches and 14 inches in diameter, and range in total depth from 701 feet to 1,120 feet with cased depths ranging from 650 feet to 900 feet.

The current SFWMD permit (36-00008-W) for the Lower Tamiami wells was issued on November 15, 2001, and expires on November 15, 2006. The SFWMD permit (36-04062-W) for the Floridan wells was issued on January 7, 2005, and expires on January 7, 2025. The approved allocations are:

Lower Tamiami

Annual Allocation:	2,094 MGY (5.74 MGD)
Maximum Daily Allocation:	8.01 MGD

Floridan Aquifer

Annual Allocation:	4,769 MGY (13.07 MGD)
Maximum Daily Allocation:	16.00 MGD

The 2003 average daily pumpage was 6.54 MGD entirely from the Lower Tamiami Aquifer, as the Floridan wells were not completed until 2004.

Treatment

Bonita Springs Utilities employs two methods of treatment: lime softening and RO. The RO system was completed in 2004 and rated by the FDEP at 6.25 MGD, with the plant being designed to accommodate expansion to 12.00 MGD. The lime softening system, which treats water from the Lower Tamiami Aquifer, has a FDEP-rated capacity of 8.00 MGD.

Proposed/Future

The CUP 36-04062-W authorizes construction of seven additional 16-inch diameter Floridan Aquifer wells with total depths of 900 feet cased to 700 feet. Bonita Springs Utilities is proposing expansion of production and RO plant capacity by 3 MGD in the 2006–2010 time frame and another 3 MGD in the 2011–2016 time frame.

Information Source

Information was provided by SFWMD permit files.

Citrus Park RV Park

Raw Water Supply

Raw water is withdrawn from four Lower Tamiami Aquifer wells and one Water Table Aquifer well at the Citrus Park facility. Two of the Lower Tamiami wells are 8 inches in diameter, and two are 4 inches in diameter. The 8-inch wells are both cased to 75 feet and equipped with pumps rated by the FDEP at 250 GPM. These wells are 112 feet and 17 feet in total depth. The two, 4-inch diameter wells are both cased to 84 feet, have total depths of 95 feet and are equipped with pumps rated by the FDEP at 250 GPM. The Water Table Aquifer well is 8 inches in diameter, equipped with a pump rated by the FDEP at 250 GPM, cased to 17 feet with a total depth of 32 feet.

The current SFWMD permit (36-00208-W) was issued on November 15, 2001, and expires on November 15, 2006. The approved allocations are:

Annual Allocation:	88 MGY (0.24 MGD)
Maximum Daily Allocation:	0.51 MGD
Lower Tamiami Aquifer	
Annual Allocation:	42 MGY (0.12 MGD)
Maximum Daily Allocation:	0.47 MGD

The average daily pumpage in 2003 was 0.18 MGD.

Treatment

Treatment is provided by an aeration and chlorination facility rated by the FDEP at 0.25 MGD.

Proposed/Future

There are no plans to expand this facility. Bonita Springs Utilities may one day provide potable water service to this RV park, though there are no definite plans or timelines to do so as of this writing.

Information Source

Information was provided by the FDEP, Bonita Springs Utilities and SFWMD water use files.

City of Cape Coral Utilities

Raw Water Supply

Raw water is withdrawn from 27 Floridan (Lower Hawthorn) Aquifer wells at the Cape Coral facility. Twenty-six wells are 12 inches in diameter and range in total depth from 642 feet to 1,100 feet. The cased depths are from 345 feet to 782 feet, and are equipped with pumps rated by the FDEP from 425 GPM to 600 GPM. The city also has a 10-inch diameter well with a total depth of 745 feet, a cased depth of 362 feet and a pump rated by the FDEP at 540 GPM. In addition, the city has a separate irrigation system, including 44.3 MGD in surface water withdrawal capacity from local canals, to supply an extensive reclaimed water system. The irrigation system also serves fire protection services.

The current SFWMD permit (36-00046-W) was re-issued on June 8, 2005, and expires on January 14, 2019. The approved allocations are:

Annual Allocation: 6,179 MGY (16.93 MGD)

Maximum Daily Allocation: 22.46 MGD

The average daily pumpage in 2003 was 9.95 MGD.

Treatment

Treatment is provided by a RO facility currently rated by the FDEP at 15.00 MGD.

Proposed/Future

The City of Cape Coral is in the process of adding an additional membrane train to its water treatment plant. This will increase the plant's capacity by 1.00 to 2.00 MGD. Raw water for this expansion is to be supplied through the construction of eight new Floridan (Lower Hawthorn) Aquifer wells. The allocations in the city's SFWMD permit accommodate this expansion.

The city has also acquired property and is in the design phase of a new, North Cape Coral Water Treatment Plant, which, like the existing facility, will use RO to treat water from the Floridan (Lower Hawthorn) Aquifer. While the new facility's initial treatment capacity will be 12 MGD, the city is anticipating an ultimate capacity of up to 36 MGD. The city is also proposing to separate the surface water withdrawals supporting its local reclaimed system from its existing CUP. A separate CUP covering the surface withdrawals would then be applied for and include development of a 76-well ASR network to increase reuse water storage capacity. A pilot ASR project has been undertaken at the Everest Parkway Water Reclamation facility. The SFWMD has awarded the city an Alternative Water Supply Grant to assist in this pilot project.

Information Source

Information was provided by the City of Cape Coral Utility Department and SFWMD water use files.

Florida Government Utility Authority (FGUA) – Lehigh Acres Facility

Raw Water Supply

Raw water is withdrawn from 14 Sandstone Aquifer wells at the Lehigh Acres facility. These wells range from 6 inches to 10 inches in diameter, have total depths between 62 and 220 feet, and casing to depths between 50 feet and 190 feet. The well pumping capacities range from 100 GPM and 500 GPM.

The current SFWMD permit (36-00166-W) was issued (modified) on March 11, 2004, and expires on December 11, 2006.

Annual Allocation: 1,206 MGY (3.3 MGD)

Maximum Daily Allocation 112.5 MG (3.75 MGD)

The 2003 average daily pumpage from the Sandstone Aquifer was 2.1 MGD.

Treatment

The Lehigh Acres Treatment Plant is permitted by the FDEP to treat 3.61 MGD using lime softening.

Proposed/Future

The FGUA received a permit modification in March 2004 to install three additional Sandstone Aquifer production wells for reliability (no increased quantities).

Information Source

Information was obtained from the Florida Government Utility Authority and SFWMD files.

City of Fort Myers Utilities

Raw Water Supply

The City of Fort Myers withdraws water from 11 Floridan Aquifer (brackish) wells. The wells are 16 inches in diameter, range in total depth from 553 feet to 800 feet, and have cased depths ranging from 455 feet to 475 feet. All but one are equipped with pumps rated by the FDEP at 1,750 GPM; the remaining well is equipped with a pump rated at 1,400 GPM.

The current SFWMD permit (36-00035-W) was issued on March 9, 2000, and expires on March 9, 2020. The approved allocations are:

Annual Allocation: 4,363 MGY (11.95 MGD)

Maximum Daily Allocation: 16.14 MGD

The average daily pumpage in 2003 was 8.50 MGD.

Treatment

Treatment is provided by a RO facility rated by the FDEP at 16.00 MGD. Prior to April 2002, raw water to supply the City of Fort Myers was withdrawn from the Caloosahatchee River and used to recharge a city-owned wellfield producing from the Water Table Aquifer. Water from the wellfield was treated at a membrane softening plant. Due to concerns over potential contamination at the Water Table wellfield and increasing concern over the sensitivity of the Caloosahatchee River and Estuary, the city developed a Floridan Aquifer source at this location and converted the membrane softening facility to a RO facility.

Proposed/Future

Beginning with the 2006–2010 time frame, the city will expand its production facilities by 5 MGD by adding 5 MGD of production capacity approximately every 5 years, or as needed. During the 2011–2015 time frame, the city has proposed to expand this plant's treatment capacity to 20.00 MGD

Information Source

Information was provided by the City of Fort Myers Utilities and SFWMD water use files.

The Greater Pine Island Water Association

Raw Water Supply

Raw water is withdrawn from four Floridan (Lower Hawthorn) Aquifer wells at the Greater Pine Island Water facility. The wells are 12 inches in diameter and range in total depth from 737 feet to 770 feet. The cased depths are from 563 feet to 598 feet. Each is equipped with a pump rated by the FDEP at 700 GPM.

The current SFWMD permit (36-00045-W) was issued on November 14, 1996, and expires on November 14, 2006. The approved allocations are:

Annual Allocation: 616 MGY (1.69 MGD)

Maximum Daily Allocation: 2.21 MGD

The average daily pumpage in 2003 was 1.42 MGD.

Treatment

Treatment is provided by a RO facility currently rated by the FDEP at 2.25 MGD based on the disposal capacity of the facility's percolation ponds.

Proposed/Future

The Greater Pine Island Water Association has constructed and is in the process of finalizing the FDEP operational permits for a deep injection well. This well will be used for the disposal of reject water produced by its RO plant. The association is simultaneously obtaining FDEP permits to increase the RO plant's capacity to 2.70 MGD. While there are no definite plans beyond these modifications, the Greater Pine Island Water Association is assessing future demands, and is considering potential wellfield sites to accommodate future expansions. The RO facility itself was designed to accommodate additional membrane tubes to allow *in situ* expansion, though there are no timelines for doing so as of this writing.

Information Source

Information was provided by the Greater Pine Island Water Association and SFWMD water use files.

The Island Water Association

Raw Water Supply

At the Island Water Association facility, raw water is withdrawn from 16 existing Floridan Aquifer wells. The wells are 6 inches to 10 inches in diameter, have an average total depth of 700 feet and cased depths ranging from 502 feet to 668 feet. The wells are equipped with pumps with capacities rated by the FDEP from 250 GPM to 600 GPM.

The current SFWMD permit (36-00034-W) was issued on November 13, 1997, and expires on November 13, 2017. The approved allocations are:

Annual Allocation: 1,809 MGY (4.96 MGD)

Maximum Daily Allocation: 8.08 MGD

The average daily pumpage in 2003 was 4.10 MGD.

Treatment

Treatment is provided by a RO facility rated by the FDEP at 5.20 MGD.

Proposed/Future

There are currently no plans to expand the RO facility. Island Water has proposed installation of a 1.2 MGD finished water ASR system in 2008 to assist in meeting peak seasonal water demands.

Information Source

Information was provided by the Island Water Association and SFWMD water use files.

Lee County Utilities – Corkscrew Water Treatment Facility

Raw Water Supply

Raw water is withdrawn from 31, 12-inch diameter wells (21 Surficial Aquifer and 10 Sandstone Aquifer wells) located at the Corkscrew wellfield. The wells range in total depth from 80 feet to 300 feet and have cased depths ranging from 30 feet to 210 feet. The 10 Sandstone Aquifer wells are equipped with pumps rated by the FDEP at 350 GPM, while the 21 Surficial Aquifer wells are equipped with pumps rated by the FDEP at 500 GPM.

The current SFWMD permit (36-00003-W), which includes allocations for Lee County's Green Meadows, Olga and College Parkway plants, was issued on May 15, 2003, and expires on April 10, 2008. The approved allocations for all sources, including surface water (C-43 Canal), the Lower and Mid-Hawthorn aquifers, the Water Table Aquifer, the Sandstone Aquifer and the Surficial Aquifer System, are:

Annual Allocation:	7,749 MGY (21.20 MGD)
Maximum Daily Allocation:	30.37 MGD

The average daily pumpage for the Corkscrew Plant in 2003 was 8.49 MGD. Stipulations on the CUP limit pumpage from the SAS in the Corkscrew Wellfield to 6.0 MGD. Stipulations on the Sandstone Aquifer in Corkscrew similarly limit production to 8.0 MGD.

Treatment

The Corkscrew facility uses a lime softening treatment rated by the FDEP at 10.00 MGD.

Proposed/Future

Lee County is proposing to expand the treatment capacity at this facility to 15.00 MGD in the 2006–2010 time frame, add 4 MGD in new freshwater production capacity and 1 MGD of additional brackish supply for blending.

Information Source

Information was provided by Lee County Utilities and SFWMD water use files.

Lee County Utilities – Cypress Lakes College Parkway Water Treatment Facility

Raw Water Supply

This facility uses raw water withdrawn from 11 Mid-Hawthorn Aquifer wells located at the County Cypress Lakes wellfield. The wells are all 8 inches in diameter and have total depths ranging from 220 feet to 285 feet, with cased depths ranging from 100 feet to 220 feet.

The current SFWMD permit (36-00003-W), which includes allocations for Lee County's Green Meadows, Olga and Corkscrew plants, was issued on May 15, 2003, and expires on April 10, 2008. The approved allocations for all sources, including surface water (C-43 Canal), the Lower and Mid-Hawthorn aquifers, the Water Table Aquifer, the Sandstone Aquifer and the Surficial Aquifer System, are:

Annual Allocation: 7,749 MGY (21.20 MGD)

Maximum Monthly Allocation: 30.37 MGD

The current CUP limits withdrawals from the Cypress Lakes wellfield to 0.75 MGD.

The average daily pumpage in 2003 for the College Parkway Plant was 1.48 MGD.

Treatment

This is a lime softening facility rated by the FDEP to treat 1.50 MGD. The facility is currently used for peaking.

Proposed/Future

The water treatment facility and wellfield are scheduled to be decommissioned in 2007.

Information Source

Information was provided by Lee County Utilities and SFWMD water use files.

Lee County Utilities – Green Meadows Water Treatment Facility

Raw Water Supply

Raw water is withdrawn from 14 Surficial Aquifer wells and 13 Sandstone Aquifer wells at the Green Meadows facility. These wells are located at Lee County's Green Meadows wellfield. The Surficial Aquifer wells are all 10 inches in diameter, and range in total depth from 20 feet to 43 feet, with cased depths from 10 feet to 22 feet. Eight of these wells are equipped with pumps rated by the FDEP at 200 GPM, while the remaining six are equipped with pumps rated by the FDEP at 500 GPM. Twelve of the 13 Sandstone Aquifer wells are 16 inches in diameter, with one having a diameter of 18 inches. These wells range in total depth from 90 feet to 235 feet, with cased depths from 90 feet to 170 feet. All but one well is equipped with pumps rated by the FDEP at 500 GPM; the remaining pump is rated by the FDEP at 350 GPM.

The current SFWMD permit (36-00003-W), which includes allocations for Lee County's Cypress Lakes, Olga and Corkscrew plants, was issued on May 15, 2003, and expires on April 10, 2008. The approved allocations for all sources, including surface water (C-43 Canal), the Lower and Mid-Hawthorn aquifers, the Water Table Aquifer, the Sandstone Aquifer and the Surficial Aquifer System, are:

Annual Allocation:	7,749 MGY (21.20 MGD)
Maximum Daily Allocation:	30.37 MGD

The current CUP limits withdrawals from the Water Table Aquifer at the Green Meadows wellfield to 4.20 MGD.

The average daily pumpage in 2003 at the Green Meadows wellfield was 9.30 MGD.

Treatment

Treatment is provided by a lime softening facility permitted by the FDEP at 9.00 MGD.

Proposed/Future

Lee County is scheduled to expand this plant to 15.00 MGD by 2010. The county also proposes to increase freshwater production by 4 MGD and install 2 MGD of brackish supply for blending at this facility.

Information Source

Information was provided by Lee County Utilities and SFWMD water use files.

Lee County Utilities – Olga Water Treatment Facility

Raw Water Supply

The Olga facility uses surface water from the Caloosahatchee River (C-43 Canal). Three pumps set at 5.4 feet elevation withdraw surface water. One pump is rated at 1,750 GPM, the second at 3,000 GPM and the third at 3,850 GPM. The Olga Plant also treats water from an on-site ASR well, which has a diameter of 8 inches, a total depth of 945 feet and a cased depth of 864 feet.

The current SFWMD permit (36-00003-W), which includes allocations for Lee County's Cypress Lakes, Green Meadows and Corkscrew plants, was issued on May 15, 2003, and expires on April 10, 2008. The approved allocations for all sources, including surface water (C-43 Canal), the Lower and Mid-Hawthorn aquifers, the Water Table Aquifer, the Sandstone Aquifer and the Surficial Aquifer System, are:

Annual Allocation: 7,749 MGY (21.20 MGD)

Maximum Daily Allocation: 30.37 MGD

The average daily pumpage in 2003 for the Olga Plant was 4.21 MGD.

Treatment

The Olga Plant is a lime softening facility rated by the FDEP to treat 5.00 MGD.

Proposed/Future

The Olga Plant will be expanded to 10.00 MGD (peak) and receive additional water withdrawn from the Caloosahatchee River, in accordance with the Minimum Flows and Levels Rule (Chapter 40E-8, Florida Administrative Code), via three additional pumps. Additional water is proposed to be stored in an expanded ASR system on-site.

Information Source

Information was provided by Lee County Utilities and SFWMD water use files.

Lee County Utilities – Pinewoods Water Treatment Facility

Raw Water Supply

At the Pinewoods facility, raw water is withdrawn from 11 Water Table Aquifer and three Sandstone Aquifer wells. The Water Table Aquifer wells are all 16 inches in diameter, have total depths between 30 feet and 42 feet and cased depths from 16 feet to 22 feet. Each well is equipped with a pump rated by FDEP at 450 GPM. Two of the Sandstone Aquifer wells are 8 inches in diameter with total depths of 171 feet and 138 feet. Both are cased to 85 feet and equipped with pumps rated at 75 GPM. The remaining Sandstone Aquifer well has a total depth of 123 feet, a cased depth of 83 feet and is equipped with a well rated at 75 GPM.

The current SFWMD permit (36-00122-W) was issued on September 9, 2004, and expires on September 9, 2014. The SFWMD permit allocating the raw water also provides the allocations for Lee County's San Carlos Plant. The approved allocations are:

Annual Allocation: 2,225 MGY (6.09 MGD)

Maximum Daily Allocation: 7.23 MGD

The current CUP limits withdrawals from the Sandstone Aquifer at the Pinewoods wellfield to 0.75 MGD and withdrawals from the Water Table Aquifer to 2.33 MGD.

The average daily pumpage in 2003 from the Pinewoods wellfield was 2.12 MGD.

Treatment

This is a RO facility rated by the FDEP at 1.80 MGD.

Proposed/Future

This facility is currently undergoing to 5.00 MGD. Additional raw water will be provided by four new Lower Hawthorn wells, which have already received SFWMD approval.

Information Source

Information was provided by Lee County Utilities and SFWMD water use files.

Lee County Utilities – San Carlos Water Treatment Facility

Raw Water Supply

Raw water is withdrawn from four Water Table Aquifer wells at the San Carlos facility. These wells are all 8 inches in diameter, have total depths between 40 feet and 45 feet and cased depths from 18 feet to 22 feet. Three wells are equipped with pumps rated by FDEP at 500 GPM, while the fourth is equipped with a pump rated by FDEP at 375 GPM.

The current SFWMD permit (36-00122-W) was issued on September 9, 2004, and expires on September 9, 2014. It should be noted that the SFWMD permit allocating the raw water also provides the allocations for Lee County's Pinewoods Plant. The approved allocations are:

Annual Allocation: 2,225 MGY (6.09 MGD)

Maximum Daily Allocation: 7.23 MGD

The current CUP limits withdrawals from the Water Table Aquifer at the San Carlos wellfield to 2.50 MGD.

The average daily pumpage in 2003 for the San Carlos Plant was 0.86 MGD.

Treatment

Treatment is provided by a lime softening facility permitted by the FDEP at 2.40 MGD.

Proposed/Future

There are no plans to expand or modify this facility.

Information Source

Information was provided by Lee County Utilities and SFWMD water use files.

Lee County Utilities – Waterway Estates Treatment Facility

Raw Water Supply

At the Waterway Estates facility, raw water is withdrawn from six Surficial Aquifer wells, 10 Mid-Hawthorn Aquifer wells and one Lower Hawthorn Aquifer well. The Surficial Aquifer wells are 43 feet to 80 feet in total depth, and have cased depths from 13 feet to 50 feet. Six of the wells are 8 inches in diameter; the remaining two are 10 inches in diameter. The Surficial Aquifer wells are equipped with pumps ranging from a FDEP-rated capacity of 30 GPM to 75 GPM. The Mid-Hawthorn Aquifer wells range from 6 inches to 10 inches in diameter and have total depths ranging from 130 feet to 240 feet. They are cased from 124 feet to 164 feet and equipped with pumps rated by the FDEP from 30 GPM to 110 GPM. The Lower Hawthorn Aquifer well is 4 inches in diameter with a total depth of 600 feet. It is cased to 300 feet and equipped with a pump rated by the FDEP at 100 GPM.

The current SFWMD permit (36-00152-W) was issued on January 15, 2004, and expires on January 15, 2024. The permit covers both the Waterway Estates and North Lee County Water Treatment facilities. The approved allocations are:

Annual Allocation:	2,276 MGY (6.23 MGD)
Maximum Daily Allocation:	8.45 MGD

The average daily pumping in 2003 was 0.81 MGD.

Treatment

This is a lime softening facility rated by the FDEP to treat 1.50 MGD.

Proposed/Future

There are no expansions planned for the treatment capacity of this facility. However, an additional Lower Hawthorn Aquifer well is authorized by the CUP. Lee County has also entered into an agreement with the SFWMD to provide additional storage capacity at the Waterway Estates Plant for reuse water. The reuse water will be distributed in the north Lee County area, including the City of Cape Coral, which has an interconnect and an interlocal agreement with Lee County.

Information Source

Information was provided by Lee County Utilities and SFWMD water use files.

Lee County Utilities – North Lee County Water Treatment Facility

Raw Water Supply

The North Lee County facility will use raw water withdrawn from the Lower Hawthorn Aquifer at the County's North Wellfield. These wells, which are in testing, will be 16 inches in diameter and will be equipped with pumps rated by FDEP at 580 GPM. They range in total depth from 592 feet to 700 feet, with cased depths from 441 feet to 500 feet.

The current SFWMD permit (36-00152-W) was issued on January 15, 2004, and expires on January 15, 2024. The permit allocates raw water for both this facility and the Waterway Estates Plant. The approved allocations are:

Annual Allocation: 2,276 MGY (6.24 MGD)

Maximum Daily Allocation: 8.45 MGD

Since this plant is not yet in operation, there is no average daily pumping data for 2003.

Treatment

This is a RO facility rated by the FDEP to treat 5.00 MGD.

Proposed/Future

The North Lee County Water Treatment Plant is scheduled for expansion to 10.00 MGD during the 2006–2010 time frame. The CUP authorizes eight additional Lower Hawthorn wells to provide raw water for this expansion.

Information Source

Information was provided by Lee County Utilities and SFWMD water use files.

Table 1. Potable Water Treatment Facilities in the Lower West Coast Planning Area – 2003.

Facility	SFWMD		2003 Average Daily Raw Water Pumped (MGD)	Withdrawal Source				FDEP Rated Capacity (MGD)	Treatment Method		
	Permit Number	Annual Allocation (MGD)		Surface Water (MGD)	Surficial Aquifer System (MGD)	Intermediate Aquifer System (MGD)	Floridan Aquifer System (MGD)		Lime Softening (MGD)	Membrane Technology (MGD)	Aeration (MGD)
Collier County											
City of Marco Island Reverse Osmosis Plant	11-00080-W	Average – 4.0 Maximum Daily – 12.7	3.30				3.30	6.00		6.00	
City of Marco Island Marco Shores Plant and Marco Island Lime Plant	11-00080-W	Average – 9.68 Maximum Daily – 12.70 (Max day combined with RO WF)	5.50	5.50				7.37 total (6.67 MGD at Marco Island Lime Plant, 0.70 MGD at Marco Shores Plant)	7.37		
City of Naples (Coastal Ridge Wellfield)	11-00017-W	Average – 18.42 Maximum Daily – 22.84	4.86		4.86			30.00	30.00		
City of Naples (East Golden Gate Wellfield)			12.50		12.50						

Table 1. Potable Water Treatment Facilities in the Lower West Coast Planning Area – 2003 (Continued).

Facility	SFWMD		2003 Average Daily Raw Water Pumped (MGD)	Withdrawal Source				FDEP Rated Capacity (MGD)	Treatment Method		
	Permit Number	Annual Allocation (MGD)		Surface Water (MGD)	Surficial Aquifer System (MGD)	Intermediate Aquifer System (MGD)	Floridan Aquifer System (MGD)		Lime Softening (MGD)	Membrane Technology (MGD)	Aeration (MGD)
Collier County North Regional Water Treatment Plant (North Hawthorn Wellfield)	11-01447-W	Average – 15.40 Maximum Daily – 21.60	8.64				8.64	20.00		20.00	
Collier County South Regional Water Treatment Plant (Golden Gate Wellfield)	11-00249-W	Average – 18.81 Maximum Daily – 31.77	17.79		17.79			20.00	12.00	8.00	
Everglades City	11-00160-W	Average – 0.29 Maximum Daily – 0.46	0.27		0.27			0.50			0.50
Florida Government Utility Authority (Golden Gate Service Area)	11-00148-W	Average – 1.92 Maximum Daily – 2.38	1.50		1.50			1.72	1.22	0.50	

Table 1. Potable Water Treatment Facilities in the Lower West Coast Planning Area – 2003 (Continued).

Facility	SFWMD		2003 Average Daily Raw Water Pumped (MGD)	Withdrawal Source				FDEP Rated Capacity (MGD)	Treatment Method		
	Permit Number	Annual Allocation (MGD)		Surface Water (MGD)	Surficial Aquifer System (MGD)	Intermediate Aquifer System (MGD)	Florida Aquifer System (MGD)		Lime Softening (MGD)	Membrane Technology (MGD)	Aeration (MGD)
Immokalee Water and Sewer District	11-00013-W	Average – 3.36 Maximum Daily – 4.71	2.44		2.44			4.50 (at 3 plants)	4.50		
Orangetree Utilities	11-00419-W	Average – 1.29 Maximum Daily – 1.90	0.25		0.25			0.75		0.75	
Port of the Islands	11-00271-W	Average – 0.29 Maximum Daily – 0.45	0.08		0.08			0.44	0.44		
Collier County Subtotals			57.13	5.50	39.69	0	11.94	91.28	55.53	35.25	0.50

Table 1. Potable Water Treatment Facilities in the Lower West Coast Planning Area – 2003 (Continued).

Facility	SFWMD		2003 Average Daily Raw Water Pumped (MGD)	Withdrawal Source				FDEP Rated Capacity (MGD)	Treatment Method		
	Permit Number	Annual Allocation (MGD)		Surface Water (MGD)	Surficial Aquifer System (MGD)	Intermediate Aquifer System (MGD)	Floridan Aquifer System (MGD)		Lime Softening (MGD)	Membrane Technology (MGD)	Aeration (MGD)
Glades County											
City of Moore Haven	22-00045-W	Average – 0.40 Maximum Daily – 0.70	0.34		0.34			0.75	0.75		
Glades County Subtotals			0.34	0.00	0.34	0.00	0.00	0.75	0.75	0.00	0.00
Hendry County											
City of LaBelle	26-00105-W	Average – 0.65 Maximum Daily – 0.81	0.61		0.61			1.00	1.00		
Clewiston Water Treatment Plant (U.S. Sugar Corporation)	26-00024-W	Average – 5.77 Maximum Daily – 10.38	6.17	6.17				6.00	6.00		
Hendry Correctional Institute	26-00164-W	Average – 1.33 Maximum Daily – 1.88	0.14		0.14			0.60	0.60		
Port LaBelle (Hendry County)	26-00096-W	Average – 0.32 Maximum Daily – 0.93	0.25			0.25		0.50	0.50		
Hendry County Subtotals			7.17	6.17	0.75	0.25	0.00	8.10	8.10	0.00	00.0

Table 1. Potable Water Treatment Facilities in the Lower West Coast Planning Area – 2003 (Continued).

Facility	SFWMD		2003 Average Daily Raw Water Pumped (MGD)	Withdrawal Source				FDEP Rated Capacity (MGD)	Treatment Method		
	Permit Number	Annual Allocation (MGD)		Surface Water (MGD)	Surficial Aquifer System (MGD)	Intermediate Aquifer System (MGD)	Floridan Aquifer System (MGD)		Lime Softening (MGD)	Membrane Technology (MGD)	Aeration (MGD)
Lee County											
Bonita Springs Utilities	36-00008-W	*Lower Tamiami Aquifer:* Average – 5.74 Maximum Daily – 8.01	6.54		6.54			14.25	8.00		
Bonita Springs Utilities	36-04062-W	*Floridan Aquifer:* Average– 13.07 Maximum Daily – 16.00	RO Plant on line 2004				13.07			6.25	
Citrus Park RV Resort	36-00208-W	Average- 0.24 Maximum Daily- 0.51 Lower Tamiami Aquifer: Average – 0.12 Maximum Daily – 0.47	0.18		0.18			0.25			0.25

Table 1. Potable Water Treatment Facilities in the Lower West Coast Planning Area – 2003 (Continued).

Facility	SFWMD		2003 Average Daily Raw Water Pumped (MGD)	Withdrawal Source				FDEP Rated Capacity (MGD)	Treatment Method		
	Permit Number	Annual Allocation (MGD)		Surface Water (MGD)	Surficial Aquifer System (MGD)	Intermediate Aquifer System (MGD)	Floridan Aquifer System (MGD)		Lime Softening (MGD)	Membrane Technology (MGD)	Aeration (MGD)
City of Cape Coral	36-00046-W	Average – 16.93 Maximum Daily – 22.46	9.95				9.95	15.00		15.00	
City of Fort Myers	36-00035-W	Average – 11.95 Maximum Daily – 16.14	8.50				8.50	16.00		16.00	
Florida Government Utility Authority (Lehigh Acres Service Area)	36-00166-W	Average- 3.30 Maximum Daily- 3.75	2.10			2.10		3.61	3.61		
Greater Pine Island Water Association	36-00045-W	Average – 1.69 Maximum Daily – 2.21	1.42				1.42	2.25		2.25	
Island Water Association	36-00034-W	Average – 4.96 Maximum Daily – 8.08	4.10				4.10	5.20		5.20	

Table 1. Potable Water Treatment Facilities in the Lower West Coast Planning Area – 2003 (Continued).

Facility	SFWMD		2003 Average Daily Raw Water Pumped (MGD)	Withdrawal Source				FDEP Rated Capacity (MGD)	Treatment Method		
	Permit Number	Annual Allocation (MGD)		Surface Water (MGD)	Surficial Aquifer System (MGD)	Intermediate Aquifer System (MGD)	Floridan Aquifer System (MGD)		Lime Softening (MGD)	Membrane Technology (MGD)	Aeration (MGD)
Lee County Corkscrew Water Treatment Plant	36-00003-W	Average – 21.20 Maximum Daily – 30.37	8.49			8.49		10.00	10.00		
Lee County Cypress Lakes College Parkway Water Treatment Plant			1.48			1.48		1.50	1.50		
Lee County Green Meadows Water Treatment Plant			9.30		9.30			9.00	9.00		
Lee County Olga Water Treatment Plant			4.21	4.21				5.00	5.00		

Table 1. Potable Water Treatment Facilities in the Lower West Coast Planning Area – 2003 (Continued).

Facility	SFWMD		2003 Average Daily Raw Water Pumped (MGD)	Withdrawal Source				FDEP Rated Capacity (MGD)	Treatment Method		
	Permit Number	Annual Allocation (MGD)		Surface Water (MGD)	Surficial Aquifer System (MGD)	Intermediate Aquifer System (MGD)	Floridan Aquifer System (MGD)		Lime Softening (MGD)	Membrane Technology (MGD)	Aeration (MGD)
Lee County Pinewoods Water Treatment Plant	36-00122-W	Average – 6.09 Maximum Daily – 7.23	2.12		2.12			1.80		1.80	
Lee County San Carlos Water Treatment Plant			0.86		0.86			2.40	2.40		
Lee County Waterway Estates Treatment Plant	36-00152-W	Average – 6.23 Maximum Daily – 8.45	0.81		0.29	0.52		1.50	1.50		
North Lee County Water Treatment Plant		Average – 6.24 Maximum Daily – 8.45		Proposed				5.00		5.00	
Lee County Subtotals			60.06	4.21	19.29	12.59	37.04	92.76	41.01	51.5	0.25
All County Totals			124.70	15.88	60.07	12.84	48.98	192.14	105.39	86.75	0.75

1a. Allocation is incorporated into previous permit references

2a. Allocation is incorporated into previous permit references

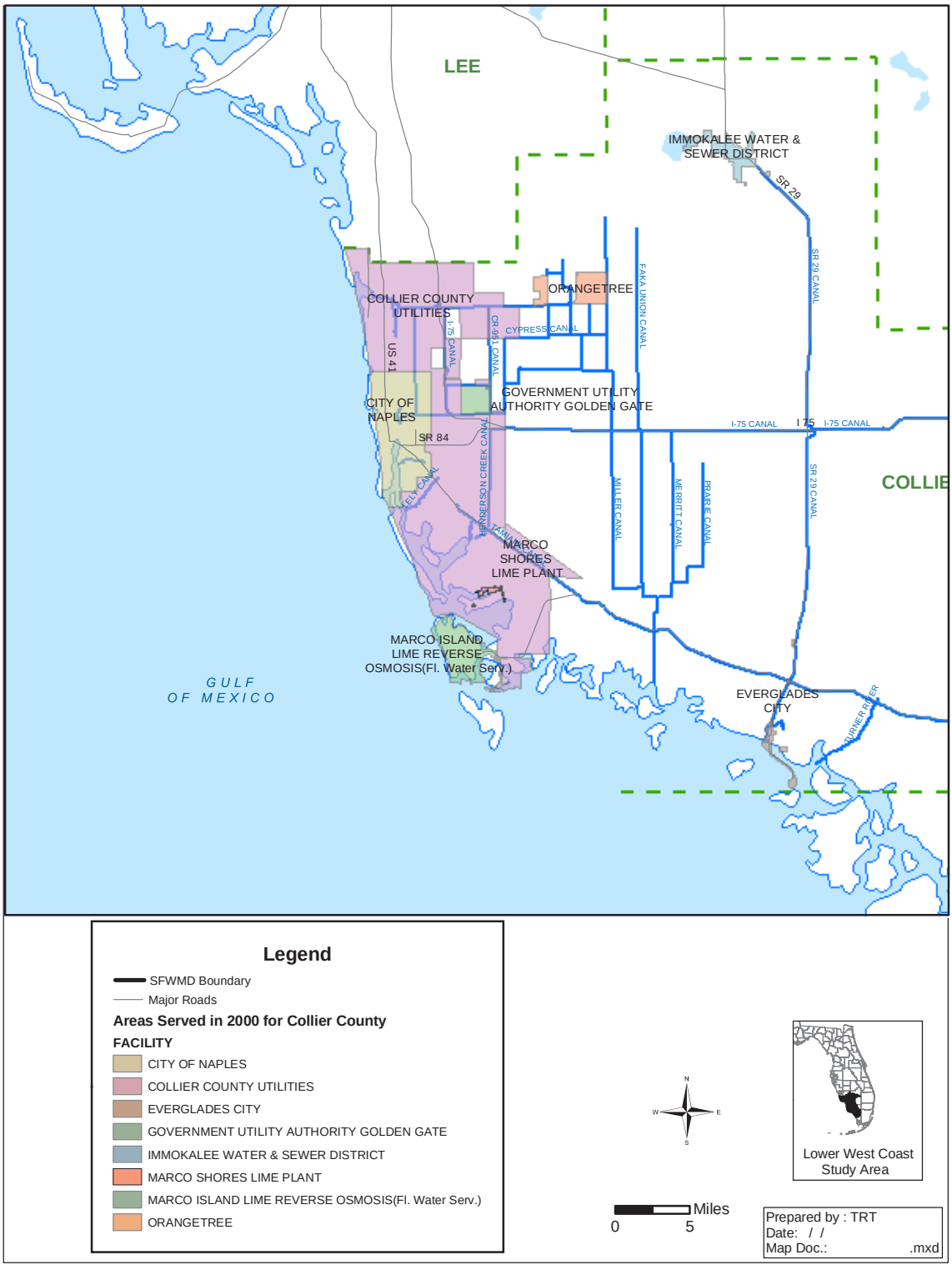

Figure 1. Potable Water Treatment Service Areas for Collier County – 2000.

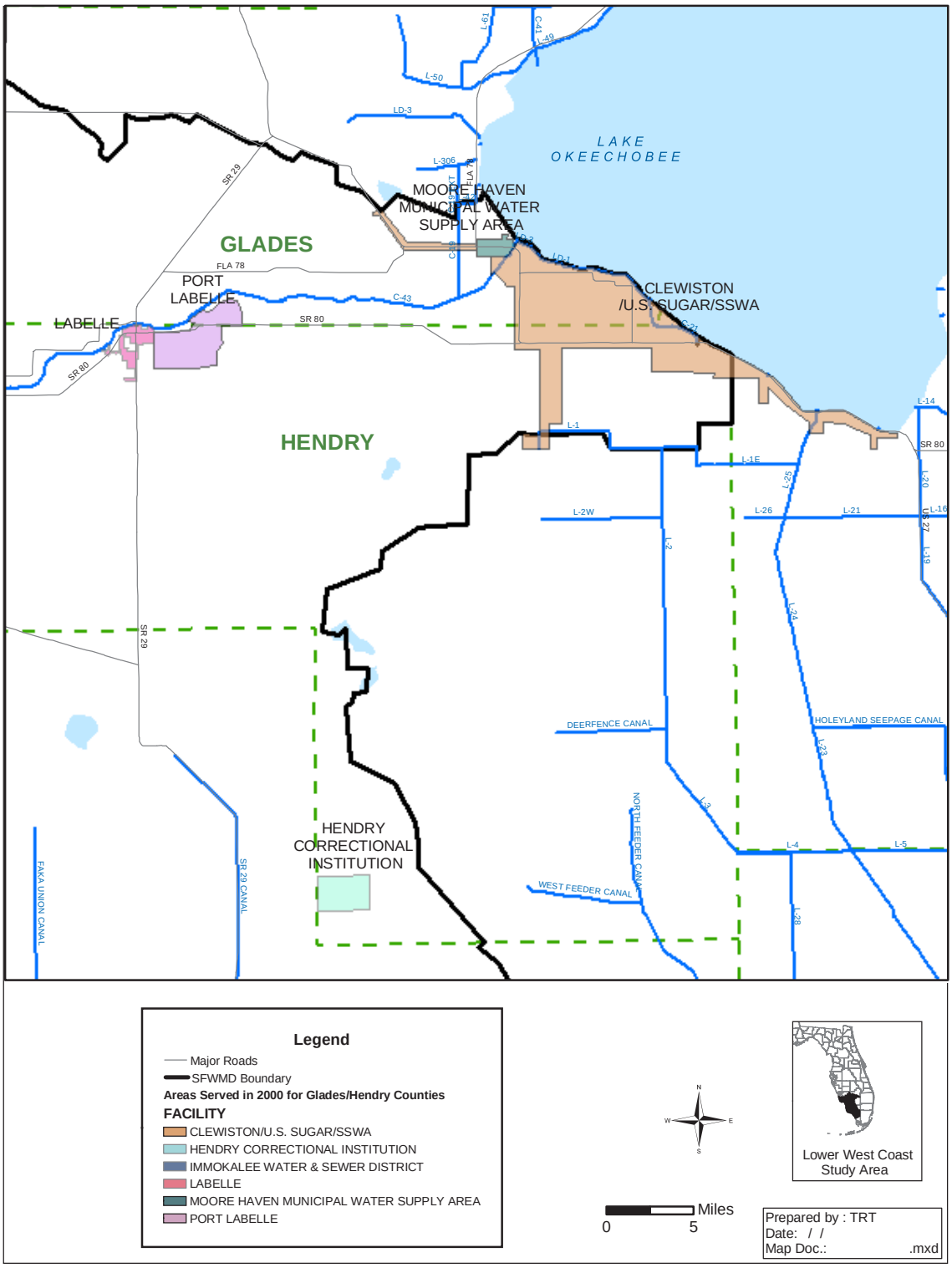

Figure 2. Potable Water Treatment Service Areas for Hendry / Glades Counties – 2000.

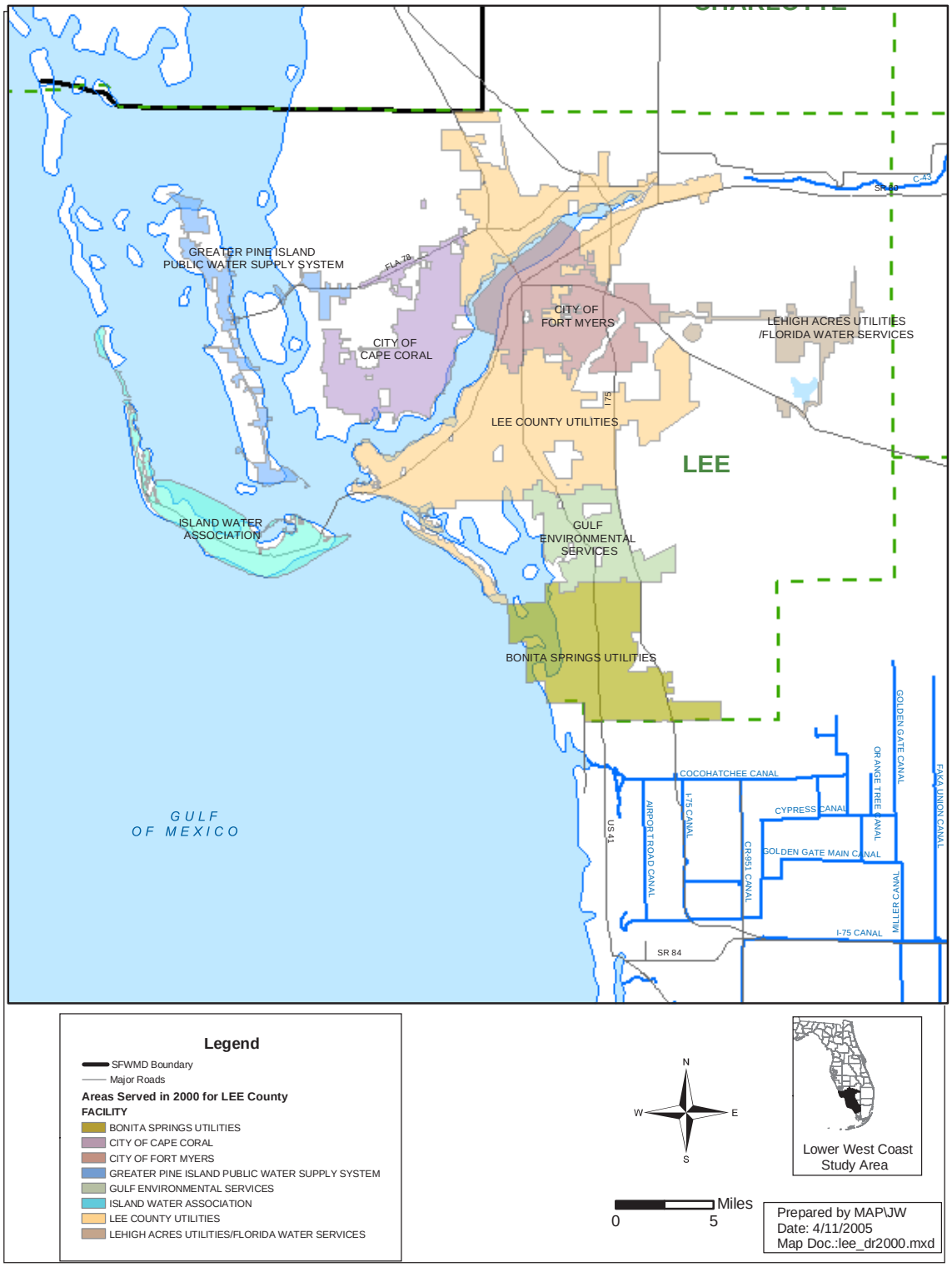

Figure 3. Potable Water Treatment Service Areas for Lee County – 2000.

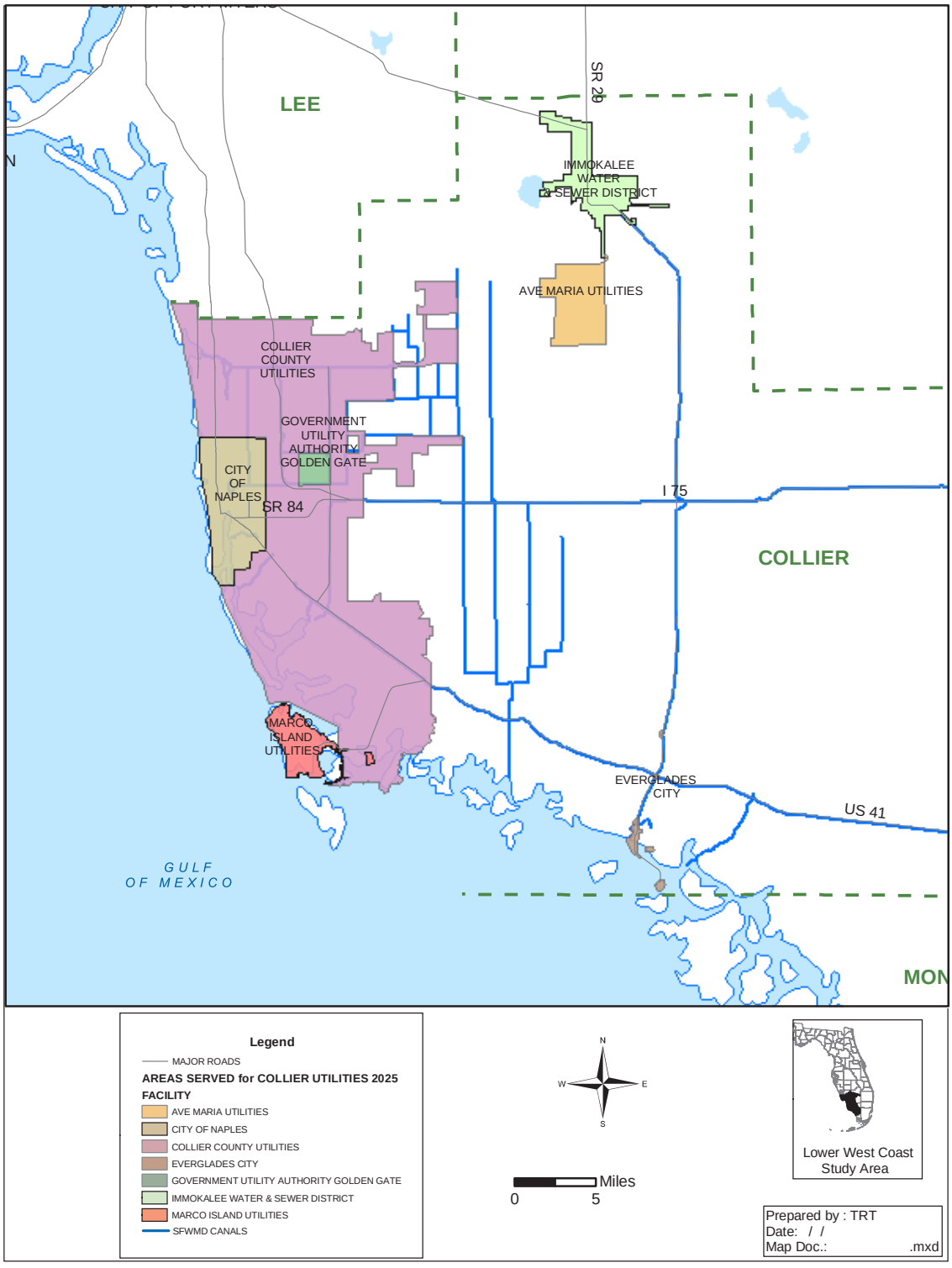

Figure 4. Water Treatment Service Areas for Collier County – 2025.

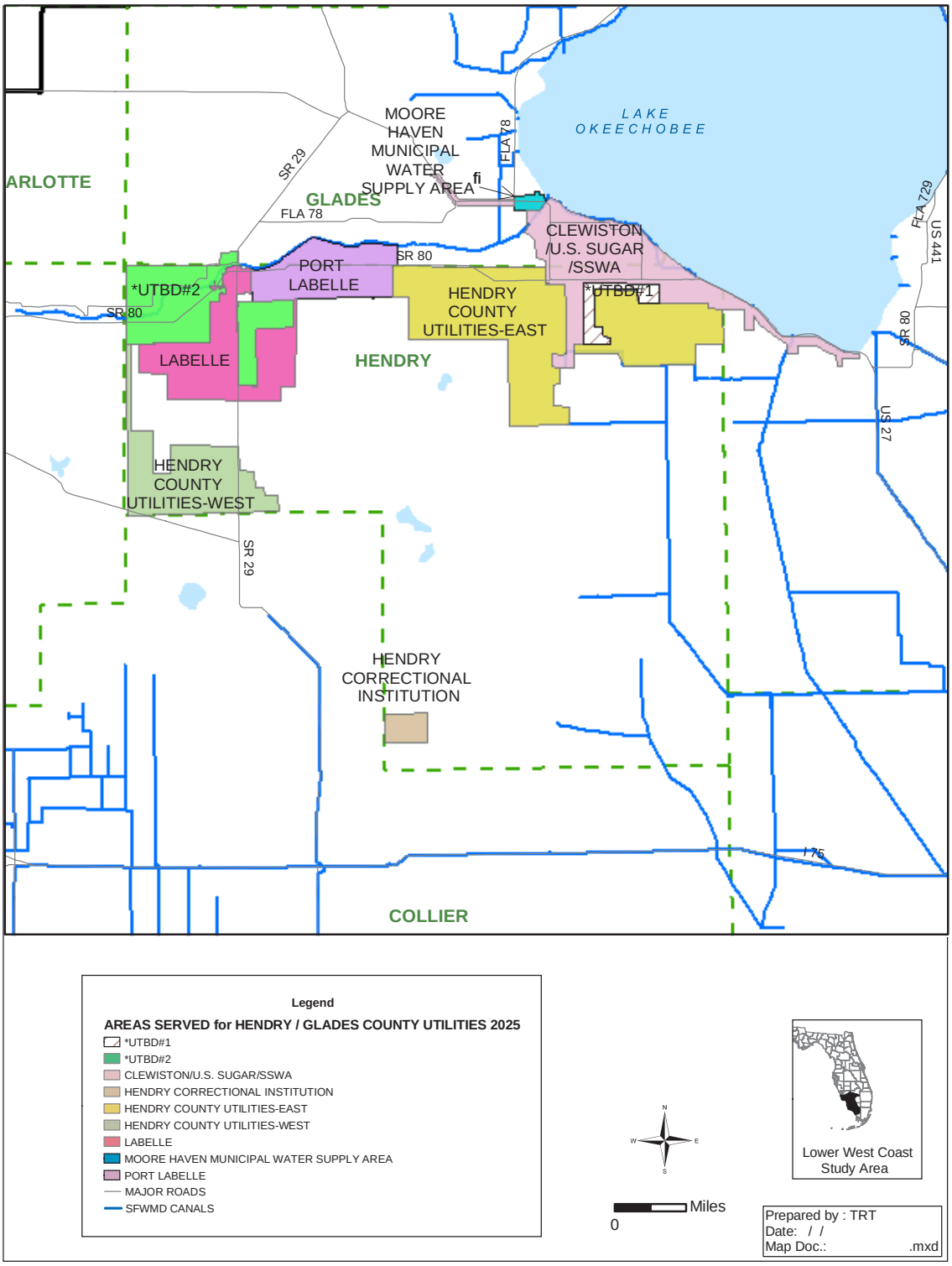

Figure 5. Treatment Service Areas for Hendry / Glades Counties – 2025.

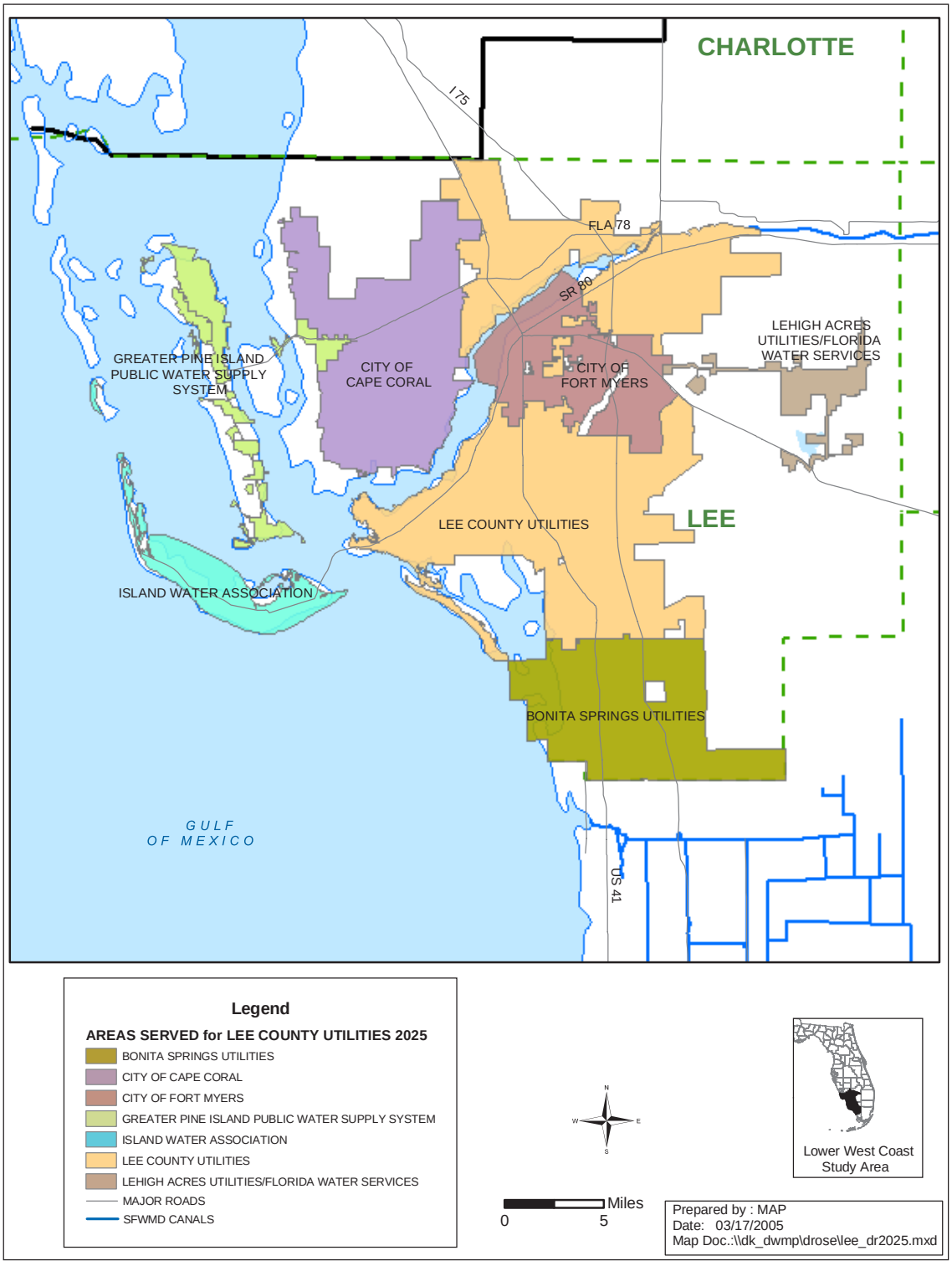

Figure 6. Water Treatment Service Areas for Lee County – 2025.

WASTEWATER TREATMENT FACILITIES

Wastewater treatment in the LWC Planning Area is provided by regional wastewater treatment facilities, smaller "package plants," and on-site treatment and disposal systems (primarily septic tanks). This plan focuses on the regional facilities because they are large enough to allow economy of operation, could have a positive impact on the water resources through reuse due to the volume of their flows, and could support a regional reuse program. Many are also located in areas close to potential reclaimed water users.

There are 44 wastewater treatment facilities with a capacity of 0.10 MGD or greater in the LWC Planning Area as indicated in **Table 2**. These facilities have a total capacity of 126.54 MGD, treating 76.48 MGD in 2003. The location of these utilities and their associated service areas is shown in **Figure 7**. Disposal methods used in 2003 included reuse, discharge to surface waters and deep well injection. Over 65 percent of the wastewater was reused via irrigation of golf courses, residential lots and other green spaces, or recharged groundwater through a rapid infiltration basin system (RIBS), commonly referred to as percolation, or "perc," ponds.

These wastewater facilities and proposed/future facilities are located in most of the urbanized areas throughout the LWC Planning Area as indicated in **Figure 7,** with slightly more than half in public ownership. The activated sludge treatment process is the most common method of treating raw effluent, though others are used as well. Treated wastewater is disposed of through a variety of methods, including discharge to surface waters, reuse and deep well injection.

Wastewater Management Methods

Three wastewater management methods are used in the LWC Planning Area: surface water discharge, deep well injection and reuse.

Surface Water Discharge

This method of wastewater management involves disposing of the effluent through a pipeline to a receiving surface water. Prior to disposal, effluent is required to receive at least secondary treatment (20 milligrams per liter (mg/L) carbonaceous biochemical oxygen demand, 20 mg/L total suspended solids or 90 percent removal, whichever is more stringent) and basic level disinfection. Additional levels of treatment may be required and are based on the characteristics of the effluent and the receiving water, as well as other regulatory requirements and standards. Effluent standards from this method are known as water quality based effluent limitations (WQBELs). The WQBELs are a means of determining the available assimilative capacity of a water body

and setting effluent limits using appropriate procedures for simulation and prediction of water quality impacts.

As regulatory requirements become more stringent, utilities may choose to find alternative means for effluent disposal. In addition, any new discharge or expansion of an existing discharge must justify compliance with the state's anti-degradation requirements prior to issuance of a permit for such a discharge. The anti-degradation rule requires a utility proposing to construct a new discharge or expanding an existing discharge to demonstrate that an alternate disposal method, such as reuse, is not feasible in lieu of a discharge to surface water, and that such a discharge is clearly in the public interest.

Deep Well Injection Class I Wells

This method of wastewater management consists of injecting secondary treated effluent (no disinfection required) through a cased well to the boulder zone, a fractured carbonate sequence formation found at depths ranging from 1,900 feet to 3,600 feet below the ground surface. Deep wells also serve as an alternative means of disposal for a reuse system. Eight wastewater facilities in the LWC Planning Area used deep well injection for all or part of their disposal needs in 2003.

Reuse

Reuse consists of using treated wastewater (reclaimed water) for a beneficial purpose. Reclaimed water is used for the irrigation of golf courses, residential lawns, parks and other green spaces, and for groundwater recharge via RIBS. Some of the facilities use reclaimed water for plant process water, and some for irrigation of the utility site, which also could be considered reuse.

Forty-two of the facilities use reuse for all or a portion of their wastewater management needs. Two-thirds (about 65 percent or about 50 MGD) of the wastewater treated in the planning area in 2003 was reused for a beneficial purpose, including irrigation for golf courses, residential lots, parks and schools. This high level of reuse helps offset demand on the potable water system, as well as provides resource benefits through the reduced need for freshwater pumping at facilities, such as golf courses, that receive reclaimed water. About 4.50 MGD was used for groundwater recharge and the remainder was used for agricultural irrigation, industrial uses and other purposes. This high level of reuse helps offset demand on the potable water system, as well as provides resource benefits through the reduced need for freshwater pumping at facilities, such as golf courses, that receive reclaimed water.

Summary Descriptions of Existing Wastewater Facilities

Summary descriptions for each of the wastewater treatment facilities (equal to or greater than 0.10 MGD) located in the LWC Planning Area, from which the previously summarized information was obtained, are presented in the following section. Each utility capsule contains the following information:

Treatment/Disposal: This section presents the current FDEP-rated capacity, the method of treatment and disposal; the average daily flow (ADF) (October 2002–September 2003); and, the reclaimed water/effluent chloride concentration.

Proposed/Future: This section presents any current construction or permitting that is under way, as well as known future treatment facility expansions and plans, including new additional facilities.

Collier County Wastewater Treatment Facilities

City of Marco Island Wastewater Treatment Facility

Treatment/Disposal

The City of Marco Island operates this contact stabilization plant. This plant has been rated by the FDEP to operate at 3.50 MGD three-month average daily flow, which disposes of treated effluent via reuse, and through a deep injection well rated by the FDEP to dispose of 5.76 MGD. This well is also used by the city's drinking water utility to dispose of RO concentrate[1].

In 2003, this wastewater treatment facility operated at an annual average daily flow of 2.01 MGD[1], of which 1.07 MGD was used to irrigate the Marco Island Country Club, Hideaway Beach golf courses, parks, one school and road median plantings[2, 3]. The remaining 0.94 MGD was disposed of through deep well injection[2].

Proposed/Future

There are currently no plans to expand or modify this facility; however, Marco Island Utilities is currently considering the addition of small outlying residential areas to its system.

Information Source

1. FDEP File Number FL014167-002-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. Marco Island Utilities, Personal Communication, January 21, 2005.

City of Marco Island - Marco Shores Wastewater Treatment Facility

Treatment/Disposal

The Marco Shores facility, operated by Marco Island Utilities[1],consists of an activated sludge wastewater treatment plant. This facility has a FDEP-rated 0.30 MGD annual average daily flow. Reuse will be primarily via RIBS and spray irrigation in limited quantities at the Marco Shores golf course.

In 2003, the annual average daily flow was 0.07 MGD[2].

Future/Proposed

The service area associated with Marco Shores (but not the facility itself) is scheduled to be transferred to Collier County. The county will connect the area to one of its regional plants. It is uncertain at this time what will happen to this facility if the transfer is made[2, 3].

Information Source

1. FDEP File Number FLA014174-002-DW2P.
2. Marco Island Utilities, Personal Communication, September 7, 2004.
3. Marco Island Utilities, Personal Communication, January 21, 2005.

City of Naples Wastewater Treatment Facility

Treatment/Disposal

Rated by the FDEP to operate at 10.00 MGD maximum month average daily flow[1], the City of Naples Wastewater Treatment Facility disposes of treated effluent through a combination of reuse and surface water discharge. Surface discharge occurs directly into the Gordon River (Class III marine waters) upstream of Naples Bay. In 2003, the annual average daily flow was 7.44 MGD, which includes 4.99 MGD of reuse throughout the City of Naples' service area. The reuse water was used for irrigation of landscaped road medians, golf courses, lawn irrigation and a variety of other uses[2].

Proposed/Future

The City of Naples is currently expanding its reuse program to serve an additional 2,111 residential customers in the Port Royale subdivision south of Central Avenue. If this expansion proves cost-effective, an additional 1,000 residential customers north of Central Avenue will be provided reuse as a second phase of this expansion[3]. There are no plans to expand the treatment capacity of this facility, which is designed to meet the demands at build-out of its service area.

Information Source

1. FDEP File Number FL0026271-001-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. City of Naples Utilities, Personal Communication, January 21, 2005.

Collier County North Regional Wastewater Treatment Facility

Treatment/Disposal

The Collier County North Regional facility is a modified activated sludge wastewater treatment facility rated by the FDEP to operate at a capacity of 24.1 MGD[1]. Disposal is provided through a combination of reuse and deep well injection. Deep well injection occurs via twin injection wells located on-site, each rated by the FDEP at 18.65 MGD maximum month average daily flow[1]. These wells are currently in use for operational testing[3].

In 2003, the annual average daily flow was 8.90 MGD. Approximately 3.60 MGD was used for irrigating 569 residences; 3.40 MGD provided irrigation for 1,510 acres for three golf courses at the Vineyards and Pelican Marsh developments; and, 0.90 MGD was used for irrigating various parks, medians and other public areas[1], with the remaining 1.00 MGD being deep well injected[2].

Proposed/Future

The plant permitted treatment capacity is 24.10 MGD maximum month average daily flow. Disposal during periods of wet weather, when demand for reuse water is low, is provided through the deep well injection.

Information Sources

1. FDEP File Number FL0141399-013-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. Collier County North Regional Wastewater Treatment Facility, Personal Communication, January 21, 2005.

Collier County South Regional Wastewater Treatment Facility

Treatment/Disposal

Collier County operates this modified activated sludge facility rated by FDEP at 8.00 MGD annual average daily flow, which is being upgraded to 16.00 MGD annual average daily flow[1]. Effluent management is provided via reuse (land application) or deep well injection[1].

Land application consists primarily of golf course irrigation at various developments within the South Regional Wastewater Treatment Plant's service area, which is also a reuse service area. There is also limited irrigation of medians and other public green spaces. The FDEP currently permits 8.96 MGD annual average daily flow to be used as landscape irrigation. However, this rated capacity will be expanded to 19.01 MGD annual average daily flow concurrent with the treatment capacity expansion for use throughout the facility's approved general reuse service area[1]. There is currently a waiting list of golf courses and other potential users of reclaimed water from this facility[2]. Reclaimed water from the county's South Regional facility is also used to maintain the hydrology of isolated, man-made wetlands at Collier County's Eagle Lake Park. These wetlands have a combined capacity of 100 million gallons, which provide both storage and filtration/recharge to the groundwater. Finally, land application of 0.25 MGD annual average daily flow also occurs via RIBS, which is being converted to lined storage ponds with a storage volume of 4.00 million gallons as part of the facility's modifications[1].

During wet-weather conditions and periods of low reuse demand, treated effluent from this facility may be deep injected into the Floridan Aquifer via a well rated by the FDEP at 9.25 MGD maximum month average daily flow. A second deep injection well, also rated at 9.25 MGD maximum month average daily flow, is currently under development[1].

In 2003, this facility treated an annual average daily flow of 7.12 MGD, of which 1.70 MGD was reused to irrigate 10 golf courses (1,261 acres); 2.90 MGD for wetland recharge; 1.20 MGD to irrigate 717 residences; 0.10 MGD for other purposes (parks, medians); and, 0.02 via the RIBS[3]. The remaining 1.20 MGD was deep well injected.

Proposed/Future Use

This facility will continue to provide wastewater treatment and reuse throughout its service area into the near future. There are currently no plans for expansion beyond the improvements discussed previously.

Information Sources

1. FDEP File Number FL0141356-005-DW1P-PD.
2. Collier County Utilities, Personal Communication, September 15, 2004.
3. 2003 FDEP Water Reuse Inventory.

Everglades City Wastewater Treatment Facility

Treatment/Disposal

Everglades City operates this extended aeration facility rated by the FDEP at 0.12 MGD. This facility disposes of treated effluent via an on-site RIBS (two percolation ponds)[1]. The 2003 annual average daily flow was 0.11 MGD[2].

Future/Proposed

There are no firm plans for expansions or modifications at this time. However, the plant's design would allow expansion to allow treatment of 0.25 MGD.[3]

Information Source

1. FDEP 2002 City of Everglades City Wastewater Treatment Facility Compliance Evaluation Inspection Report.
2. 2003 FDEP Water Reuse Inventory Appendix B.
3. Everglades City, Personal Communication, January 20, 2005.

Florida Government Utility Authority - Golden Gate Wastewater Treatment Facility

Treatment/Disposal

Operated by the Florida Government Utility Authority, this is an activated sludge facility rated by the FDEP at 0.95 MGD annual average daily flow. Reuse is accomplished by the facility's on-site (7-acre, 4-pond) RIBS, which has a design capacity of 1.25 MGD, but which is currently rated by the FDEP to operate at 0.95 MGD[1]. The 2003 annual average daily flow was 1.27 MGD[2].

Proposed/Future

The FGUA has not announced plans for expansion or modification as of this writing.

Information Sources

1. FDEP File Number FLA142140-001-DW1P.
2. 2003 FDEP Water Reuse Inventory Appendix B.

Immokalee Wastewater Treatment Facility

Treatment/Disposal

This extended aeration wastewater treatment facility, operated by the Immokalee Water and Sewer District, is rated by the FDEP at 2.50 MGD annual average daily flow. This facility uses both reuse and underground injection to dispose of treated effluent. Reuse is achieved through land application at the wastewater treatment plant and at an off-site facility, known as the "Section 8 Sprayfield." Together, these sites have a combined disposal capacity of 1.13 MGD annual average daily flow, and both sites have storage ponds (combined total capacity of 69.73 million gallons) to hold water until it can be reused. Deep well injection provides 2.50 MGD (maximum daily flow as rated by the FDEP) of wet-weather disposal capacity[1]. In 2003, the annual average daily flow at the water treatment plant was 1.99 MGD[1], including 0.30 MGD of reuse at the Section 8 Sprayfield[2].

Proposed/Future

The Immokalee Water and Sewer District anticipates expanding this facility to 4.00 MGD based on a recently completed capacity analysis report. Preliminary planning and design will begin in the near future[3].

Information Source

1. FDEP File Number FLA014132-005-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. Immokalee Water and Sewer District, Personal Communication, January 21, 2005.

Orangetree Wastewater Treatment Facility

Treatment/Disposal

Orangetree Utilities operates this extended aeration process wastewater treatment facility. This facility is rated by the FDEP for 0.35 MGD monthly average flow, with reuse via RIBS at two locations[1]. In 2003, the annual average daily flow was 0.17 MGD[2].

Future/Proposed

Collier County is scheduled to take over the Orangetree Service Area in 2012[3].

Information Source

1. FDEP File Number FLA014165-003-DW2P.
2. AM Engineering, Personal Communication, February 7, 2005.
3. Collier County *Water Supply Facilities Work Plan,* Greeley and Hansen, 2004.

Port of the Islands Wastewater Treatment Facility

Treatment/Disposal

The Port of the Islands facility is a Bardenpho process advanced wastewater treatment facility rated by the FDEP for 0.20 MGD maximum month average daily flow operated by the Port of the Islands Community Improvement District. This facility reuses treated effluent via surface water discharge to a Receiving Wetlands Discharge Location[1]. The 2003 annual average daily flow was 0.05 MGD[2].

Proposed/Future

The Port of the Islands Community Improvement District is currently developing a reuse system to provide up to 0.31 MDG of irrigation for lawns, roadway medians and other landscape applications throughout the community. When completed, this system will serve as the primary disposal method, though the surface water discharge system will remain as a backup[1, 3].

Information Source

1. FDEP File Number FLA0141704-003-DW2P.
2. 2003 FDEP Water Reuse Inventory.
3. Port of the Islands Community Improvement District, Personal Communication, January 20, 2005.

Glades County Wastewater Treatment Facilities

Glades County Wastewater Treatment Facility

Treatment/Disposal

The Glades County facility uses an extended aeration wastewater treatment process and is operated by the City-County Public Works Authority. The facility is rated by the FDEP at 0.24 MGD annual average daily flow. Reuse is provided via land application at a 15.20-acre sprayfield, rated by the FDEP at 0.09 MGD annual average daily flow. In addition, a 52.25-acre man-made wetland site provides 0.23 MGD annual average daily flow of disposal as rated by the FDEP[1]. In 2003, the annual average daily flow was 0.18 MGD[2].

Future/Proposed

The plant is being expanded to provide treatment for up to 0.29 MGD annual average daily flow with disposal through the existing wetland and sprayfield facilities[2].

Information Source

1. FDEP File Number FLA016891-005-DW2P.
2. City-County Public Works Authority, Personal Communication, January 20, 2005.

Hendry County Wastewater Treatment Facilities

City of LaBelle Wastewater Treatment Facility

Treatment/Disposal

The City of LaBelle operates a sequencing batch reactor (SBR) process facility. This facility is rated by the FDEP at 0.75 MGD annual average daily flow. Reuse is provided through a 99-acre RIBS facility consisting of seven basins with a rated capacity of 0.75 MGD (annual average daily flow)[1]. In 2003, the annual average daily flow was 0.21 MGD[2].

Future/Proposed

The city completed the installation of lines to serve an additional 600 residences within its service area. The city anticipates adding additional customers in the near future, as several large developments have initiated the approval process. In addition, the City of LaBelle is working with Hendry County to expand its utility service area. It is anticipated that this plant will be expanded, or possibly a new facility constructed, to accommodate growth in the expanded service area.

Information Source

1. FDEP File Number FLA014283-002-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. City of LaBelle, Personal Communication, January 24, 2005.

Clewiston Wastewater Treatment Facility

Treatment/Disposal

This wastewater treatment facility operated by the City of Clewiston consists of an extended aeration plant rated by FDEP at 1.50 MGD annual average daily flow. Reuse is provided via land application at a 193-acre sprayfield also rated by the FDEP at 1.50 MGD (annual average daily flow). The sprayfield has under drains that lead to a perimeter ditch, from which water is pumped into the Sugarland Drainage District's Canal #3. Water from Sugarland Drainage Ditch #3 is typically discharged into the Caloosahatchee River, but can also be pumped into Lake Okeechobee as dictated by lake levels and irrigation needs[1].

In 2003, the annual average daily flow was 1.16 MGD[2].

Proposed/Future

There are no plans to expand this facility at the time of this writing[3].

Information Source

1. FDEP File Number FL0040665-004-DW1.
2. 2003 FDEP Water Reuse Inventory.
3. City of Clewiston Utilities, Personal Communication, January 13, 2005.

Hendry Correctional Institution

Treatment/Disposal

Operated by the Florida Department of Corrections, this wastewater treatment facility is rated by the FDEP to treat 0.36 MGD three-month average daily flow using an extended aeration process. Reclaimed water is reused via a slow-rate restricted public access land application system (56-acre sprayfield) or by RIBS (two ponds)[1]. The 2003 annual average daily flow was 0.11 MGD[2].

Proposed/Future

There are no expansions or modifications planned for this facility at this time.

Information Sources

1. FDEP File Number FLA014306-001-DW2P.
2. 2003 FDEP Water Reuse Inventory.

Hendry County Port LaBelle Wastewater Treatment Facility

Treatment/Disposal

The Port LaBelle Wastewater Treatment Facility, operated by Hendry County Utilities, consists of an extended aeration plant rated by FDEP at 0.25 MGD annual average daily flow. Reuse is provided via a RIBS rated at 0.50 MGD annual average daily flow[1]. In 2003, the annual average daily flow was 0.19 MGD[2].

Proposed/Future

Discussions with Hendry County Utilities indicate that both its potable water and wastewater systems and service areas will be expanded in the near future; however, there are no definitive plans. The exact boundaries of the expanded service areas are currently being discussed with the City of LaBelle.

Information Source

1. FDEP File Number FLA014290-001-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. Hendry County Utilities, Personal Communication, January 24, 2005.

Lee County Wastewater Treatment Facilities

Bonita Springs Country Club Utilities Wastewater Treatment Facility

Treatment/Disposal

Realnor Hallendale, Inc. had operated this extended aeration activated sludge secondary treatment facility. This facility is rated by the FDEP at 0.25 MGD maximum month average daily flow. Reuse is provided by two percolation RIBS ponds, also rated at 0.25 MGD maximum month average daily flow[1]. The 2003 annual average daily flow was 0.11 MGD[2].

Proposed/Future

Bonita Springs Utilities purchased this facility, and it is now off-line. Effluent from the area formerly served by this plant is processed at Bonita Springs Utilities' main facility and reused[3].

Information Source

1. FDEP File Number FLA014442-004-DW2P.
2. 2003 FDEP Water Reuse Inventory.
3. Bonita Springs Utilities, Personal Communication, January 24, 2005.

Bonita Springs Utilities

Treatment/Disposal

Bonita Springs Utilities' conventional activated sludge facility has a FDEP-rated capacity of 7.00 MGD maximum month average daily flow. Effluent management is provided via reuse for golf courses and residential developments within the Bonita Springs area[1]. As part of this irrigation system, reclaimed water is distributed to a series of holding ponds and lakes with a total wet-weather storage capacity of 14.69 million gallons. In addition, there is a 6.00 million gallon lined reject storage pond at the Bonita Springs Utilities site.

The 2003 annual average daily flow was 3.33 MGD[2], of which 100 percent was reused as irrigation water for the Creekside, Marsh and Bay Island golf courses (1.76 MGD), as well as for residential (2,366 units) and other irrigation uses[1] (1.57 MGD).

Proposed/Future

Bonita Springs Utilities has begun the permitting process for a membrane bioreactor facility to be known as the East Plant, which will come on-line by the end of 2007 or early 2008. Reuse for golf courses, lawns and similar applications in the rapidly growing Bonita Springs area will serve as the disposal method[3].

Information Source

1. FDEP File Number FL014443-011-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. Bonita Springs Utilities, Personal Communication, January 24, 2005.

City of Cape Coral Everest Parkway Wastewater Treatment Facility

Treatment/Disposal

Operated by the City of Cape Coral and rated by the FDEP to treat up to 8.50 MGD annual average daily flow, the Everest Parkway facility provides reclaimed water for irrigating residential lawns, parks, schools, roadway medians, churches and other landscaped areas throughout the city via its dual water system. As a backup for periods of "No Demand for Reuse Water," the city is also permitted to discharge treated effluent from its Everest Parkway facility into the Caloosahatchee River at a location rated by the FDEP at 15.10 MGD annual average daily flow. This surface water discharge site is shared with the Southwest Wastewater Treatment Plant[1], which is another facility operated by the City of Cape Coral.

The 2003 annual average daily flow was 6.67 MGD, which (along with reclaimed water from the Southwest facility) was used via the Water Independence for Cape Coral (WICC) Program to irrigate 10 parks, three schools, 32,171[3] residences and one decorative fountain. The reclaimed water is augmented by fresh water (12.81 MGD for the Everest Parkway and Southwest facilities combined) from the city's canal system. In addition, 0.76 MGD was discharged to the Caloosahatchee River[2].

Proposed/Future

The Cape Coral City Council has authorized the expansion of the Everest Parkway facility to 14.00 MGD, which is scheduled to be completed in 2008[3].

Information Source

1. FDEP File Number FL0030007-002-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. City of Cape Coral Utilities, Personal Communication, January 21, 2005.

Cape Coral Southwest Wastewater Treatment Facility

Treatment/Disposal

Operated by the City of Cape Coral, the Southwest facility is rated by the FDEP to treat up to 6.60 MGD annual average daily flow and is. As with its Everest Parkway Plant, the city reuses the treated effluent from its Southwest facility to irrigate residential lawns, parks, schools, roadway medians, churches and other landscaped areas throughout the city. As a backup for periods of low reuse demand, the city is also permitted to discharge treated effluent from the Southwest plant into the Caloosahatchee River at a location rated by the FDEP at 15.10 MGD annual average daily flow. As previously mentioned, this surface water discharge site is shared with the Everest Parkway Wastewater Treatment Plant, which is another facility operated by the City of Cape Coral.

The 2003 annual average daily flow was 4.96 MGD, of which 100 percent was used (in conjunction with reclaimed water from the Everest Parkway Plant) via the WICC Program to irrigate 10 parks, three schools, 31,171 residences and one decorative fountain[2].

Proposed/Future

The City Council has authorized the expansion of the Southwest facility to 14.00 MGD, which, like the Everest expansion, is scheduled to be completed in 2008[3]. The Southwest plant will also connect to the ASR well being developed at the Everest facility to store reclaimed water during periods of no demand, so it will not be discharged to the Caloosahatchee River.

Information Source

1. FDEP File Number FL0030007-002-DW1P.
2. 2003 FDEP Water Reuse Inventory.

Citrus Park Wastewater Treatment Facility

Treatment/Disposal

Citrus Park is an extended aeration treatment facility rated by the FDEP at 0.20 MGD three-month average daily flow. Treated effluent from this facility is reused through a RIBS consisting of five percolation ponds with 2.90 acres of bottom area[1].

The 2003 annual average daily flow was 0.07 MGD[2].

Proposed/Future

This utility service area is proposed for consolidation with the Bonita Springs Utilities service area sometime prior to 2025[3]. There are no plans for expansion of this facility.

Information Source

1. FDEP File Number FLA014477-002-DW3P.
2. 2003 FDEP Water Reuse Inventory.
3. Personal Communication with Bonita Springs Utilities.

City of Fort Myers Central Wastewater Treatment Facility

Treatment/Disposal

The Central Wastewater Treatment Facility is a Bardenpho process plant operated by the City of Fort Myers. The facility is rated by the FDEP at 11.00 MGD annual average daily flow. Effluent management for this facility includes surface water discharge to the Caloosahatchee River at a location approved by the FDEP for 11.00 MGD annual average daily flow, and reuse rated by the FDEP at 1.51 MGD annual average daily flow for landscape irrigation within the city's service area[1]. The 2003 annual average daily flow was 7.02 MGD, of which 6.23 MGD was discharged to the river and 0.79 MGD was reused primarily for irrigating a city-owned park[2].

Proposed/Future

The City of Fort Myers is currently in the design phase of a planned expansion of this facility's reclaimed water production to 6.00 MGD (currently 1.51 MGD). The reclaimed water will be used at parks, athletic fields and golf courses throughout the city. The SFWMD is providing financial assistance for this project through its Alternative Water Supply Grant Program[3].

Information Source

1. FDEP File Number FL0021261-002-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. SFWMD Alternative Water Supply Contract DG040635.

City of Fort Myers South Wastewater Treatment Facility

Treatment/Disposal

The City of Fort Myers operates this Bardenpho process facility rated by the FDEP at 12.00 MGD annual average daily flow. This facility disposes of treated effluent through a FDEP-rated discharge into the Caloosahatchee River[1]. The 2003 annual average daily flow was 7.40 MGD[2].

Proposed/Future

The City of Fort Myers is planning to upgrade this facility to provide 6.00 MGD of reuse water for use in new developments, such as Arborwood and Pelican Preserve, which are generally located east of Interstate 75 in the eastern portions of the incorporated area of the city[3].

Information Source

1. FDEP File Number FL0021270-002-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. Fort Myers Utilities, Personal Communication, January 13, 2005.

City of Sanibel Donax Water Reclamation Facility

Treatment/Disposal

The City of Sanibel operates the Donax Wastewater Treatment Facility, which uses a conventional activated sludge treatment process. The Donax facility is rated by the FDEP to operate at 2.38 MGD maximum month average daily flow with a permitted disposal capacity of 2.38 MGD maximum month average daily flow. Reuse and deep well injection at this facility is rated by the FDEP at 5.96 MGD. The deep well is shared with the Island Water Association (Sanibel's potable water provider), which allocates 3.31 MGD of the well's capacity[1].

The 2003 annual average daily flow was 1.15 MGD, of which 0.67 MGD was used to irrigate 227 acres of golf courses, primarily at the Dunes and Beachview courses, although some reclaimed water is also sent to the Wulfert Point course[2, 3].

Proposed/Future

The City of Sanibel is preparing to undertake a water balance report to determine whether additional reclaimed water (from both the Wulfert and Donax facilities) will be available to expand reuse into additional residential areas[2].

Information Source

1. FDEP File Number FLA014641-003-DW1P.
2. City of Sanibel Utilities, Personal Communication, December 2004 and January 2005.
3. 2003 FDEP Water Reuse Inventory.

City of Sanibel Wulfert Point Wastewater Treatment Facility

Treatment/Disposal

The City of Sanibel operates the Wulfert Point Wastewater Treatment Facility, which is rated by the FDEP to treat 0.13 MGD maximum month average daily flow using the extended aeration activated sludge treatment process. Reclaimed water from this facility is used to irrigate the Wulfert Point Golf Course, which also receives reclaimed water from the city's Donax Wastewater Treatment Plant[1].

The 2003 annual average daily flow was 0.03 MGD, which was used entirely for golf course irrigation[2].

Proposed/Future

The City of Sanibel is preparing to undertake a water balance report to determine whether additional reclaimed water (from both the Wulfert and Donax facilities) will be available to expand reuse into additional residential areas[3].

Information Source

1. FDEP File Number FLA014625-004-DW2P.
2. 2003 FDEP Water Reuse Inventory.
3. City of Sanibel Utilities, Personal Communication, January 15, 2005.

Cross Creek Wastewater Treatment Facility

Treatment/Disposal

Cross Creek, an extended aeration treatment facility run by the Utilities of Eagle Ridge, is rated by the FDEP to operate at 0.25 MGD maximum month average daily flow. Treated effluent from this facility is reused for landscape irrigation of 60 acres at the Cross Creek Country Club golf course[1].

The 2003 annual average daily flow was 0.08 MGD[2], which was used for golf course irrigation[2].

Proposed/Future

There are no changes or expansions planned for this facility, which will continue to serve the Cross Creek community[3].

Information Sources

1 FDEP File Number FLA014505-003-DW2P.

2 2003 FDEP Water Reuse Inventory.

3. Utilities of Eagle Ridge, Personal Communication, January 14, 2005.

Del Tura Wastewater Treatment Facility

Treatment/Disposal

This facility serves the Del Tura community and is rated by the FDEP to treat 0.20 MGD annual average daily flow of wastewater using the activated sludge extended aeration process. Treated effluent is disposed of by way of landscape irrigation (golf course) rated by the FDEP at 0.20 MGD annual average daily flow and via a RIBS rated by FDEP at 0.12 MGD annual average daily flow[1]. The 2003 annual average daily flow was 0.18 MGD, which was used to irrigate 81 acres (north nine holes) of the Del Tura golf course[2].

Proposed/Future

This facility is designed to support the Del Tura community at build-out, so there are no plans for expansion or modification[3].

Information Source

1. FDEP File Number FLA014563-002-DW2P.
2. 2003 FDEP Water Reuse Inventory.
3. Hometown America, Inc., Utilities Department, Personal Communication, January 27, 2005.

Eagle Ridge Wastewater Treatment Facility

Treatment/Disposal

Operated by Eagle Ridge, this facility is rated by the FDEP to operate as a 0.44 MGD three-month average daily flow contact stabilization plant, or as a 0.32 MGD three-month average daily flow extended aeration plant. Reuse will be via irrigation over 90 acres of the Eagle Ridge golf course[1].

The 2003 annual average daily flow was 0.25 MGD, which was used entirely for irrigation[2].

Proposed/Future

There are no plans to expand or modify this plant[3].

Information Source

1. FDEP File Number FLA014498-004-DW2P.
2. 2003 FDEP Water Reuse Inventory.
3. Utilities of Eagle Ridge, Personal Communication, January 15, 2005.

Fiddlesticks Golf and Country Club Wastewater Treatment Facility

Treatment/Disposal

The Fiddlesticks facility is an extended aeration treatment facility rated by the FDEP at 0.60 MGD annual average daily flow. This facility disposes of treated effluent via a RIBS rated by the FDEP at 0.15 MGD or land application (irrigation) at the Fiddlesticks golf course[1].

The 2003 annual average daily flow was 0.07 MGD, which was used entirely for golf course irrigation[2].

Proposed/Future

There are no planned changes or expansions of this facility, which will continue to provide reuse water for the Fiddlesticks golf course[3].

Information Source

1. FDEP File Number FLA014484-001-DW2P.
2. 2003 FDEP Water Reuse Inventory.
3. Fiddlesticks Wastewater Treatment Facility, Personal Communication, January 14, 2005.

Florida Government Utility Authority - Lehigh Acres Wastewater Treatment Facility

Treatment/Disposal

The Florida Government Utility Authority (FGUA) operates this contact stabilization facility. This facility has the capacity to treat 2.50 MGD annual average daily flow, but the FDEP limits it to 2.10 MGD annual average daily flow because of disposal capacity. Treated effluent is reused via golf course irrigation, as well as an on-site RIBS[1]. In 2003, the annual average daily flow was 2.22 MGD, of which 1.95 MGD was disposed via the utility's RIBS, with the remaining 0.27 MGD being reused for irrigating 220 acres at the Lehigh Acres North golf course[2].

Proposed/Future

The FGUA is currently planning to expand the treatment capacity of this plant by an additional 1.00 MGD, bringing its capacity to 3.50 MGD. As part of this expansion, the utility is analyzing the possibility of increasing its reclaimed water production in order to serve golf courses and residential areas within Lehigh Acres. A deep injection well is also being considered in order to provide wet-weather disposal capacity[3].

Information Source

1. FDEP File Number FLA014565-001-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. FGUA, Personal Communication, January 14, 2005.

Forest Utilities Wastewater Treatment Facility

Treatment/Disposal

This complete-mix, activated sludge process treatment plant operated by Forest Utilities, Inc. is rated by the FDEP at 0.50 MGD annual average daily flow. Forest Utilities reuses the water from this facility to irrigate 280 acres of golf courses. Water can also be sent to a 1.30 million gallon reclaimed water storage facility prior to land application[1]. The 2003 annual average daily flow was 0.24 MGD[2], of which 100 percent was used to irrigate the two golf courses at the Forest Country Club.

Proposed/Future

A recent capacity analysis by Forest Utilities indicates that its existing facility has adequate capacity through build-out of its franchise area. There are no plans to expand or modify the plant[3].

Information Source

1. FDEP File Number FLA014478-002-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. Forest Utilities, Personal Communication, January 20, 2005.

Gasparilla Island Water Association, Inc.

Treatment/Disposal

The Gasparilla Island Water Association can operate this facility using different processes depending on the wastewater flow and operating needs of the system for a maximum FDEP-rated capacity of 0.71 MGD annual average daily flow. Regardless of the treatment method used, treated effluent is disposed of through a deep injection well rated by the FDEP at 0.81 MGD annual average daily flow, or through land application as golf course irrigation rated by the FDEP at 0.71 MGD annual average daily flow[1].

The 2003 annual average daily flow was 0.32 MGD, of which 0.28 MGD was used to irrigate the Gasparilla Inn golf course (127 acres) and 0.04 MGD was deep well injected[2].

Proposed/Future

The Gasparilla Island Water Association is considering the possible expansion of its reuse system to include irrigation along its Rails-to-Trails bike path and other public green spaces for an additional 0.11 MGD of reuse[1, 3].

Information Source

1. FDEP File Number FLA014641-003-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. Personal Communication, Gasparilla Island Water Association, January 14, 2005.

Heron's Glen Wastewater Treatment Facility

Treatment/Disposal

Heron's Glen is an extended aeration treatment plant rated by the FDEP at 0.25 MGD three-month average daily flow. This facility disposes of treated effluent through reuse[1]. The 2003 annual average daily flow was 0.13 MGD, which was used to irrigate 32 acres at the Heron's Glen golf course. The plant has a 750 thousand gallon holding tank to store reclaimed water during periods of wet weather when it cannot be used for irrigation[1, 2].

Proposed/Future

Future plans are not available at this time.

Information Sources

1. FDEP File Number FLA014618-001-DW3P.
2. 2003 FDEP Water Reuse Inventory.

Hunter's Ridge Wastewater Treatment Facility

Treatment/Disposal

The Hunter's Ridge facility was rated by the FDEP at 0.10 MGD annual average daily flow. Treated effluent is reused for irrigation at the Hunter's Ridge golf course[1]. The 2003 annual average daily flow was 0.03 MGD; however, with groundwater supplements the Hunter's Ridge golf course received 0.21 MGD[2].

Proposed/Future

Expansion of this facility to a 0.20 MGD treatment plant will allow reclaimed water to be used for the golf course, greenbelts and common areas within the Hunter's Ridge community[1].

Information Source

1. FDEP File Number FLA014541-002-DW2P.
2. 2003 FDEP Water Reuse Inventory.

Jamaica Bay West Wastewater Treatment Facility

Treatment/Disposal

Jamaica Bay West is an extended aeration process facility rated by FDEP at 0.30 MGD annual average daily flow. This facility uses land application via an on-site RIBS rated at 0.30 MGD annual average daily flow[1]. In 2003, the annual average daily flow was 0.19 MGD[2].

Proposed/Future

There are no plans to expand or modify this facility. Jamaica Bay has discussed with Lee County the possibility of connecting to Lee County Utilities; however, there are no firm plans or agreements[3].

Information Source

1. FDEP File Number FLA014658-003-DW2P.
2. 2003 FDEP Water Reuse Inventory.
3. Jamaica Bay West, Personal Communication, January 20, 2005.

Lake Fairways/Pine Lakes Wastewater Treatment Facility

Treatment/Disposal

The Lake Fairways/Pine Lakes Wastewater Treatment Facility is an extended aeration facility operated by North Fort Myers Utility, Inc., rated by the FDEP at 0.30 MGD annual average daily flow. This facility disposes of treated effluent via land application at a 0.30 MGD annual average daily flow RIBS, as well as 57 acres of golf course and other landscape irrigation at the Pine Lakes golf course[1]. The 2003 annual average daily flow was 0.15 MGD, which includes 0.10 MGD for golf course other landscape irrigation, and 0.05 MGD via the RIBS[2].

Proposed/Future

This facility may be taken off-line in the future and its service area connected to North Fort Myers Utilities' regional plant[3].

Information Source

1. FDEP File Number FLA014463-001-DW2.
2. 2003 FDEP Water Reuse Inventory.
3. North Fort Myers Utilities, Personal Communication, January 24, 2005.

Lee County Fiesta Village Wastewater Treatment Facility

Treatment/Disposal

Lee County operates this extended aeration facility rated by the FDEP at 5.00 MGD annual average daily flow. This facility disposes of treated effluent via surface water discharge, as well as reuse. Major users of reclaimed water include the Cypress Lake Country Club, Myerlee Country Club, Landings Yacht and Golf Club, Crown Colony golf courses, surrounding residential developments and Cypress Lake High School. This facility is also permitted to discharge up to 5.00 MGD (maximum month average daily flow) to the Caloosahatchee River[1]. The 2003 annual average daily flow was 2.60 MGD, which includes 0.98 MGD of reuse at 436 acres of golf courses, 75 acres of residential development (0.16 MGD) and the high school (0.08 MGD)[2].

Proposed/Future

Lee County Utilities plans to expand reuse in the area served by this utility to 3.16 MGD annual average daily flow. Anticipated users include golf courses at the Golf View Country Club, the Village of Seven Lakes, the Caloosa Yacht and Racquet Club, and various residential and commercial developments[1].

Information Source

1. FDEP File Number FL0039829-010-DW1P.
2. 2003 FDEP Water Reuse Inventory.

Lee County Fort Myers Beach Wastewater Treatment Facility

Treatment/Disposal

Fort Myers Beach is a conventional activated sludge facility operated by Lee County Utilities. This facility is rated by the FDEP at 6.00 MGD annual average daily flow. Treated effluent is disposed of via reuse and deep well injection[1]. The 2003 annual average daily flow was 3.31 MGD[2], which includes 1.46 MGD of irrigation at the Gulf Harbor, Kelly Greens, Pine Ridge Road and Lexington golf courses; 0.53 MGD of residential irrigation and other reuse; 0.29 MGD of RIBS; and, 1.03 MGD of deep injection[2].

Proposed/Future

There are currently no plans to further expand or modify this facility[3].

Information Source

1. FDEP File Number FL0039829-010-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. Lee County Utilities, Personal Communication, January 24, 2005.

Lee County Gateway Wastewater Treatment Facility

Treatment/Disposal

Gateway is an extended aeration treatment facility rated by the FDEP for 0.50 MGD annual average daily flow. The plant also includes a 2.00 million gallon storage reuse tank where water is stored prior to reuse. The reuse water is used as irrigation throughout the 5,000-acre Gateway Services District Regional Reuse Service Area, which includes residential and common areas, such as parks, schools, roadway medians, etc. Additional reuse is provided by a RIBS rated at 0.08 MGD[1].

The treatment plant's annual average daily flow for 2003 was 0.30 MGD. Supplemented by groundwater, the treated water was used to irrigate 1,853 residences, three parks and one school. Groundwater accounted for 1.06 MGD of flow in 2003[2].

Proposed/Future

This facility, purchased by Lee County in 2003, is currently in the design phase of a 2.00 MGD expansion. This will bring its capacity to 2.50 MGD, of which 100 percent will be used for irrigation. This is the first of three intended expansions that will result in an ultimate capacity of 6.00 MGD, with disposal to be provided entirely via reuse. In addition, possible ASR may provide wet-weather storage[3, 4].

Information Source

1. FDEP File Number FLA014477-002-DW3P.
2. 2003 FDEP Water Reuse Inventory.
3. Gateway Services Community Development District, Personal Communication, January 14, 2005.
4. Lee County Utilities, Personal Communication, January 24, 2005.

Lee County Pine Island Wastewater Treatment Facility

Treatment/Disposal

This conventional activated sludge facility operated by Lee County Utilities has the ability to treat 0.50 MGD, but its permitted capacity is limited by the FDEP to 0.25 MGD to match its current disposal capacity. Treated effluent is disposed of via reuse (land application sprayfield rated at 0.25 MGD) with a deep injection well permitted at 0.13 MGD, providing wet-weather backup capacity[1]. The 2003 annual average daily flow was 0.10 MGD, which was disposed of entirely through an 83-acre sprayfield, without the need for deep well injection[2].

Proposed/Future

An additional 0.25 MGD sprayfield is under development to bring this facility's disposal capacity to 0.50 MGD to match its treatment capacity[1, 3].

Information Source

1. FDEP File Number FL0039829-010-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. Lee County Utilities, Personal Communication, January 24, 2005.
3. City of Cape Coral Utilities, Personal Communication, January 21, 2005.

Lee County San Carlos Park Wastewater Treatment Facility

Treatment/Disposal

The San Carlos facility may operate an extended aeration or contact stabilization facility depending on flows and needs of the system. Rated by the FDEP to operate at 0.30 MGD annual average daily flow, effluent treated at this facility is reused through land application on 95 acres of the San Carlos Park golf course[1].

The 2003 annual average daily flow was 0.19 MGD, which was used entirely for golf course irrigation[2].

Proposed/Future

This facility was purchased by Lee County to be interconnected with Lee County's wastewater utility system in the future[3].

Information Sources

1. FDEP File Number FLA014560-003-DW2P.
2. 2003 FDEP Water Reuse Inventory.
3. Lee County Utilities, Personal Communication, January 14, 2005.

Lee County Three Oaks Wastewater Treatment Facility

Treatment/Disposal

Lee County purchased the Three Oaks extended aeration process wastewater treatment plant from Gulf Environmental Services. Recently rated by FDEP to operate at 3.00 MGD annual average daily flow, golf course irrigation (reuse) provides the primary means of disposal via the Vines Country Club, Pelican Sound, West Bay Club and Villages of Country Creek golf courses (369 total golf course acres irrigated)[1]. During wet periods, when reclaimed water is not needed for irrigation, treated water may be discharged through a FDEP-rated outfall to the Estero River. The 2003 annual average daily flow was 1.54 MGD, of which 100 percent was used for golf course irrigation[2, 3].

Proposed/Future

In 2005, two additional golf courses (Stoneybrook and Grande Oaks) began using reclaimed water from the Three Oaks facility for irrigation, bringing the rated reuse total to 3.27 MGD annual average daily flow. Lee County Utilities is also investigating the possibility of providing reclaimed water for irrigation at the Miromar Lakes Golf Course, Florida Gulf Coast University and potentially selling reclaimed water to Resource Conservation Systems, Inc., a private firm that provides reclaimed water for irrigation in the Bonita Springs area. Lee County is in the process of selecting an engineering firm to begin the design work to expand this facility's treatment capacity to 6.00 MGD, with effluent management provided by reuse[3].

Information Source

1. FDEP File Number FLA0145190-011-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. Lee County Utilities, Personal Communication, January 24, 2005.

Lee County Waterway Estates Wastewater Treatment Facility

Treatment/Disposal

Lee County Utilities operates this extended aeration/activated sludge treatment facility. This facility is rated by the FDEP at 1.25 MGD annual average daily flow. Disposal is provided through 0.25 MGD of land application (golf course irrigation) and 1.00 MGD of surface water discharge at a location along the Caloosahatchee River permitted by the FDEP[1]. In 2003, the annual average daily flow was 1.05 MGD, of which 0.25 MGD was used to irrigate 118 acres at the Lochmoor Golf Course[1] and 0.80 was discharged to the Caloosahatchee River[3].

Proposed/Future

With financial assistance from the SFWMD, Lee County is constructing a new 0.5 million-gallon storage tank and associated pumping facilities that will enable the golf course to better use reclaimed water. The Waterway Estates facility will also be connected to Cape Coral's reclaimed water system. Cape Coral has agreed to accept up to 75 percent of the reclaimed water produced by the Waterway Estates facility, which will enable reuse even when the golf course does not need reclaimed water for irrigation[4].

Information Source

1. FDEP File Number FL0030325-001-DW1P.
2. 2003 FDEP Water Reuse Inventory.
3. Lee County Utilities, Personal Communication, January 24, 2005.
4. SFWMD Contract C-12123.

North Fort Myers Utilities Wastewater Treatment Facility

Treatment/Disposal

This is an extended aeration facility operated by North Fort Myers Utilities, Inc., and is rated by the FDEP to treat up to 3.50 MGD annual average daily flow. Disposal is primarily reuse via landscape irrigation at various golf courses and residential developments. In addition, treated effluent may be deep well injected as rated by the FDEP at 4.00 MGD[1]. The annual average daily flow for 2003 was 1.52 MGD[2], with the Six Lakes Golf and Country Club, Riverbend and Sabal Springs golf courses accounting for 0.43 MGD of reuse, while lawn irrigation (500 residences in Sabal Springs) accounted for another 0.19 MGD. The remaining 0.90 MGD was deep well injected[2].

Proposed/Future

North Fort Myers Utilities has initiated an engineering study to determine when and to what extent this facility (which is its main facility) should expand to accommodate growth on vacant lands within its service area. In addition, North Fort Myers Utilities has entered into a contract with the City of Cape Coral to treat up to 0.73 MGD of wastewater (including effluent from the new Entrada development) and provide up to 1.00 MGD of reclaimed water for use in the city's reuse system. As the facility's treatment capacity expands, it is likely that its deep injection well capacity will also have to be expanded to ensure wet-weather disposal capacity[3].

Information Source

1. FDEP File Number FLA014548-004-DW1P.
2. 2003 FDEP Water Reuse.
3. North Fort Myers Utilities, Personal Communication, January 24, 2005.

South Seas Plantation Wastewater Treatment Facility

Treatment/Disposal

The South Seas Plantation facility combines extended aeration with contact stabilization, and has the capacity to treat 0.45 MGD annual average daily flow, but the FDEP has limited its permitted capacity to 0.26 MGD annual average daily flow based on disposal capacity[1]. Disposal is achieved through land application of 0.26 MGD annual average daily flow on 32 acres of the South Seas Plantation golf course[2]. There are also two golf course ponds, which provide both storage (0.64 million gallons) and disposal through percolation[1]. The 2003 annual average daily flow was 0.13 MGD, of which 100 percent was used for golf course irrigation[2].

Proposed/Future

At this time, there are no plans to expand or modify this facility. However, as part of the reconstruction in the wake of the 2004 hurricane season, South Seas Plantation is considering the possibility of adding additional units, which could trigger the need to expand the treatment plant's capacity[3].

Information Source

1. FDEP File Numbers FLA014686-001-DWF and FLA014686-002-DW2.
2. 2003 FDEP Water Reuse Inventory.
3. Aqua Source Utilities, Personal Communication, January 25, 2005.

Table 2. Wastewater Treatment Facilities in the Lower West Coast Planning Area – 2003.

Facility	FDEP Permitted Capacity (MGD)	2003 Average Daily Flow (MGD)	Disposal Method				
					Reuse		
			Deep Well (MGD)	Surface Water Discharge (MGD)	Public Access Irrigation (MGD)	Rapid Infiltration Basins (MGD)	Other (MGD)
Collier County							
City of Marco Island Marco Island	3.50	2.01	0.94		1.07		
City of Marco Island Marco Shores	0.30	0.07			0.02	0.05	
City of Naples	10.00	7.44		2.45	4.99		
Collier County North Regional	24.1	8.90	1.00		7.90		
Collier County South Regional	8.00	7.12	1.20		5.90	0.02	
Everglades City	0.12	0.11				0.11	
Florida Government Utility Authority – Golden Gate	0.95	1.27				1.27	
Immokalee	2.50	1.99	1.69				0.30 for agricultural irrigation
Orangetree	0.35	0.17				0.17	
Port of the Islands	0.20	0.05		0.05			
Collier County Subtotals	50.02	29.13	4.83	2.50	19.88	1.62	0.30
Glades County							
Glades County	0.24	0.18	0.00	0.00	0.00	0.00	0.18 for agricultural irrigation
Hendry County							
City of LaBelle	0.75	0.21				0.21	
Clewiston	1.50	1.16					1.16 for agricultural irrigation
Hendry Correctional Institute	0.36	0.11					0.11 for agricultural irrigation
Port LaBelle	0.25	0.19				0.19	
Hendry County Subtotals	2.86	1.67	0.00	0.00	0.00	0.40	1.27

Table 2. Wastewater Treatment Facilities in the Lower West Coast Planning Area – 2003 (Continued).

Facility	FDEP Permitted Capacity (MGD)	2003 Average Daily Flow (MGD)	Disposal Method				
					Reuse		
			Deep Well (MGD)	Surface Water Discharge (MGD)	Public Access Irrigation (MGD)	Rapid Infiltration Basins (MGD)	Other (MGD)
Lee County							
Bonita Springs Country Club	0.25	0.11				0.11	
Bonita Springs Utilities	7.00	3.33			3.33		
Cape Coral – Everest and Southwest Combined	8.50 - Everest 6.60 - Southwest 15.10 total	6.67 - Everest 4.96 - Southwest 11.63 total		0.76	10.87		
Citrus Park	0.20	0.07				0.07	
City of Fort Myers Central	11.00	7.02		6.23	0.79		
City of Fort Myers South	12.00	7.40		7.40			
City of Sanibel Donax	2.38	1.15	0.48		0.67		
City of Sanibel Wulfert Point	0.13	0.03			0.03		
Cross Creek	0.25	0.08			0.08		
Del Tura Country Club	0.20	0.18			0.18		
Eagle Ridge	0.44	0.25			0.25		
Fiddlesticks	0.15	0.07			0.07		
Florida Government Utility Authority Lehigh Acres	2.10	2.22			0.27	1.95	

Table 2. Wastewater Treatment Facilities in the Lower West Coast Planning Area – 2003 (Continued).

Facility	FDEP Permitted Capacity (MGD)	2003 Average Daily Flow (MGD)	Disposal Method				
					Reuse		
			Deep Well (MGD)	Surface Water Discharge (MGD)	Public Access Irrigation (MGD)	Rapid Infiltration Basins (MGD)	Other (MGD)
Forest Utilities	0.50	0.24			0.24		
Gasparilla Island Water Assoc.	0.71	0.32	0.04		0.28		
Heron's Glen	0.25	0.13			0.13		
Hunter's Ridge Utility Company	0.10	0.03			0.03		
Jamaica Bay West	0.30	0.19				0.19	
Lake Fairways/Pine Lakes	0.30	0.15			0.10	0.05	
Lee County Fiesta Village	5.00	2.60		1.38	1.22		
Lee County Fort Myers Beach	6.00	3.31	1.03		1.99	0.29	
Lee County Gateway Services Community Development District	0.50	0.30			0.30		
Lee County Pine Island	0.25	0.10					0.10
Lee County San Carlos Park	0.30	0.19			0.19		
Lee County Three Oaks	3.00	1.54			1.54		
Lee County Waterway Estates	1.25	1.05		0.80	0.25		
North Fort Myers Utilities	3.50	1.52	0.90		0.62		
South Seas Plantation	0.26	0.13			0.13		
Lee County Subtotals	73.42	45.34	2.45	16.57	23.56	2.66	0.10
Totals	**126.54**	**76.32**	**7.28**	**19.07**	**43.44**	**4.68**	**1.85**

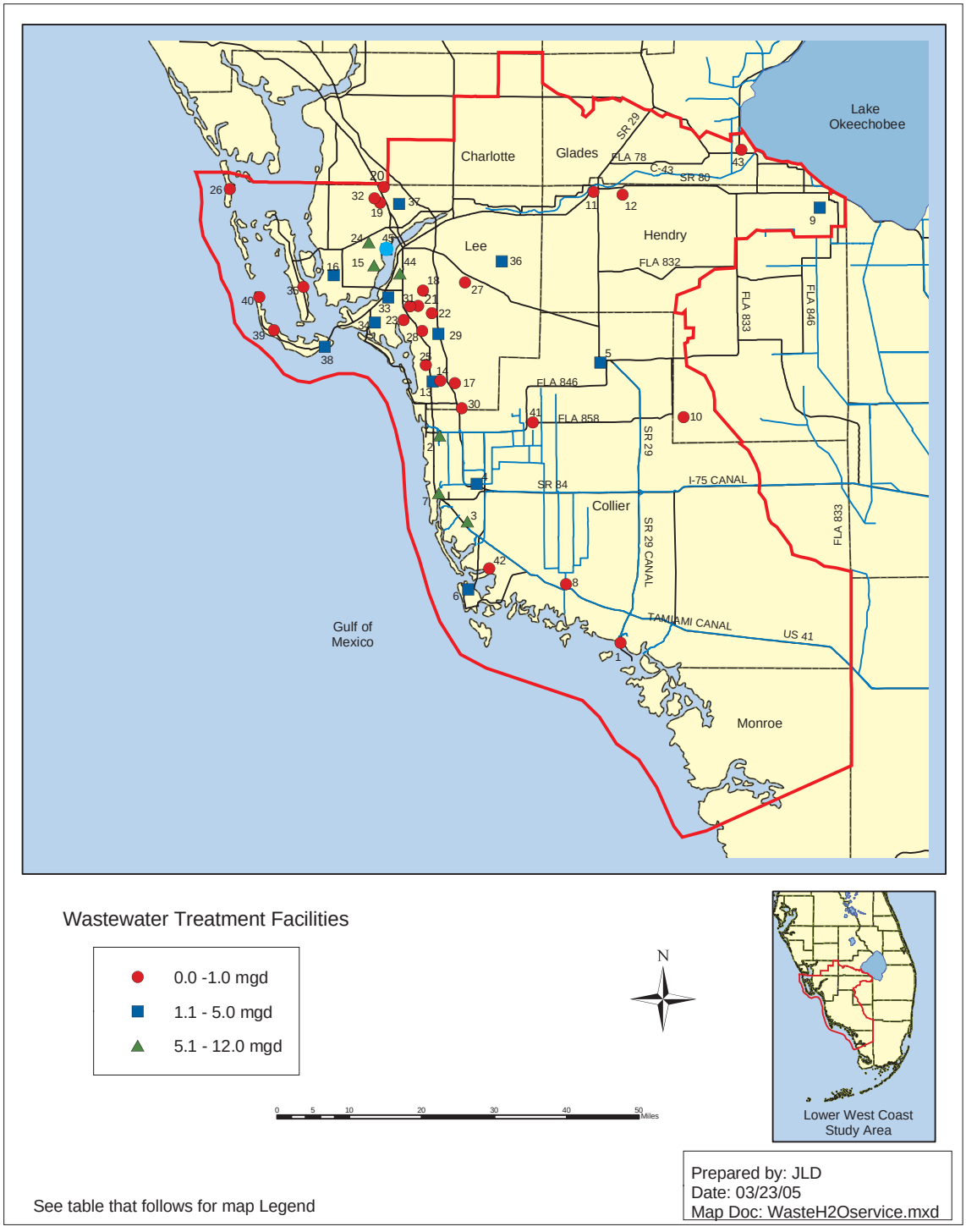

Figure 7. Treatment Facilities in the Lower West Coast Planning Area.